FINAL TECHNICAL REPORT

OSRO/RAS/602/JPN

« Surveillance model for Avian Influenza in 4 pilot provinces in Vietnam »

Second phase mission

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RESUME :

Dans le cadre d'un projet financé par le Gouvernement Japonais et mis en œuvre par la FAO, le CIRAD est intervenu pour effectuer une mission d'expertise relative à la surveillance de la grippe aviaire hautement pathogène. Cette mission avait pour objectif de proposer des activités permettant de renforcer le niveau de surveillance actuel de la maladie dans les 4 provinces pilotes du projet. Il a été demandé au consultant, lors d'une première mission, de faire une revue des systèmes existants et de proposer un modèle de surveillance peu coûteux qui après avoir été testé à une petite échelle, pourrait être proposé au Gouvernement pour extension éventuelle. La deuxième mission, devait permettre de mettre en œuvre les activités de surveillance active et d'assurer leur suivi et une partie de leur évaluation.

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Executive summary

One of the objectives of the project OSRO/RAS/602/JPN implemented by FAO in Vietnam is to strengthen the surveillance and the rapid response capability of the local veterinary authorities regarding the Highly Pathogenic Avian Influenza.
In order to build on what already existed, a preliminary review of the current surveillance system was performed during an initial mission. Based on that review, proposals were issued to develop a **sustainable surveillance model** adapted to the epidemiological situation of the AI in Vietnam.
Those **proposals were tested between January 2007 and the end of March 2008**.

The model, tested in the **4 pilot provinces** of the project, has been developed to strengthen the surveillance of H5N1 infection among backyard and commercial poultry. This **model was designed to increase the detection and the notification of suspect poultry health events** that could be highly pathogenic avian influenza.

The **first stage** was to **stimulate and encourage reporting through the passive surveillance system**. This was achieved using a variety of activities including a targeted awareness campaign, a training programme and improvement of data standardisation and management at different levels. One of the purposes of this awareness campaign was to establish and publicise a very sensitive case definition for HPAI suspicion for farmers and paraveterinarians.

The **second stage** was the development of an **active surveillance programme**. The **first component** of this programme was to **test a monitoring tool for vaccinated semi-commercial broiler farms**. The **second component** was the **establishment of a risk-based surveillance programme, named Community Animal Disease Surveillance (CADS), using a participatory approach** for data collection. The design of the CADS programme aims to increase the chance of detecting outbreaks in selected Communes. Selection criteria for communes included history of outbreak and risk factors for disease transmission.

Performance indicators have been developed for reporting and active surveillance activities to monitor implementation and also to assess improvements of critical points related to the delays in reporting and the application of proper outbreak investigation for instance.

Training activities of the district veterinarians and paraveterinarians took a **very important place** in the project.

Terms of Reference

OSRO/RAS/602/JPN

OSRO/RAS/602/JPN

Under the overall guidance of the Chief, Animal Health Service (AGAH), the technical guidance of the Head of EMPRES, the operational supervision of the Emergency Operations Service (TCEO), and in collaboration with the ECTAD Regional Office RAP Bangkok and the Avian Influenza Senior Technical Advisor in FAO Hanoi, the consultant will support the Dept of Animal Health & Dept Livestock Production with respect to implementing a field surveillance model via a pilot studies in 4 provinces.

Specifically the consultant will:

- Agree with Dept Animal Health & Dept Livestock Production (MARD) counterparts the activities of the active surveillance programme previously designed {FAO-VN/Desvaux/Dec06} – incorporating any suggestions from Govt counterparts
- In collaboration with Govt counterparts and FAO field project assistants undertake training in 4 provinces
- In association with FAO field project assistants follow the implementation of the active surveillance pilot – monitoring it via performance indicators
- In collaboration with Govt counterparts and FAO field project assistants recommend amendments during the pilot period if required
- In collaboration with Govt counterparts and FAO field project assistants organize the evaluation of the surveillance activities at the end of the pilot period – including making recommendations about extending to other areas
- Provide a comprehensive mission report to the Govt of Viet Nam and FAO

Qualifications: The Consultant will have veterinary degree from an internationally recognized veterinary faculty and have at least six years of proven experience. The Consultant should have working experience in the Southeast Asia region, preferably in Vietnam.

Languages: S/he will have level C proficiency in English.

Duty Station: Hanoi, with travel to the provinces, as required.

Duration: 30 days 'when actually employed' between 16 April & 31 December 2007

Security: The consultant must be aware of the security phase of country of assignment and understand the implications for his/her own security. As soon as he arrives at the duty station, through the FAO Representative or directly, he must contact the designated security officer to be briefed on all the recommended security measures. In case this procedure is not correctly applied, the consultant may not be covered under the insurance.

Vaccinations: The consultant must ensure that he has received any necessary medical vaccinations/ medical care before departing from home address.

Mission Agenda

Date	Total	Activity
19-mars	0,5	Peter van Beek, work on biosecurity pilot project
21-mars	0,5	OFFICE WORK
22-mars	0,25	MEETING DAH
27-28	1,5	VISIT NAM DINH- PRESENTATION PILOT + discussion active surveillance
04-avr	0,5	MEETING FAO FOR PREPARATION TRAINING PROGRAM / DEBRIEFING PHU THO / ANALYSE COMMUNE AT RISK
05-avr	0,5	WORK OFFICE
06-avr	0,75	MEETING PRIVATE COMPAGNIES / DAH +OFFICE WORK
10-avr	0,25	MEETING DAH
19-avr	0,5	PREPARATION TRAINING COURSE PE
23-avr	0,5	PREPARATION TRAINING COURSE PE + ACTIVITIES FOLLOW UP
26-avr	0,25	Meeting Les Sims
08-mai	1	OFFICE WORK
09-mai	0,5	OFFICE WORK
10-11 mai	2,5	TRAINING PHO THO
14-mai	0,5	MEETING FAO BIOSECURITY PILOT PROGRAM
15-16/06	2	TRAINING NAM DINH
22-mai	0,5	OFFICE WORK: training reports + WORK ON DECISION TREE
28-mai	1	meeting at FAO
31-mai	0,5	meeting Dr Dung at DAH + outbreak form + DFC protocol
4 june	0,5	office work, communes at risk Vinh Lonh
12-13 June	2,5	Training Vinh Long
4 July	0,5	meeting FAO Jeff GILBERT
9 July	0,5	office work
16 July	1	office work
14-sept	0,25	Meeting FAO- Care
18-sept	0,25	Meeting DAH on surveillance follow-up
21-sept	0,25	Meeting DAH on pilot Biosecurity
01-oct	0,5	Follow up + NVCD
15-oct	0,25	Report CADS activity
01-nov	0,25	meeting at FAO with D.Hadrill / Phuong / A.Brioudes
16-nov	0,25	meeting at FAO with Phuong, A. Brioudes and Dr Luc
7 dec	0,25	meeting at FAO with CARE
17 dec	0,5	meeting with Dr Ha + office work
18dec	1	meeting with Dr Luc + office work
30 dec	1	data analysis
31 dec	0,5	data analysis
After contract end	5,25	Evaluation preparation with FAO and CARE, data analysis, report writing
TOTAL	30	

Introduction

After an initial mission that was aimed at evaluating the existing surveillance system , developing a surveillance model and starting to test it, this second mission was aimed at following the implementation of the passive reporting activities and to launch and monitor the active surveillance programme.

1. Surveillance model: presentation and implementation

1.1 Summary of the model

With a majority of poultry vaccinated in the higher risk areas, the clinical expression of H5N1 inevitably changed and as a result the approach to surveillance needed to be reassessed. Within the framework of the current FAO/Japan project, a model, tested in 4 pilot provinces, has been developed to strengthen the surveillance of H5N1 infection among backyard and commercial poultry. This model was designed to increase the detection and the notification of suspect poultry health events that could be highly pathogenic avian influenza.
The first stage was to stimulate and encourage reporting through the passive surveillance system. This was achieved using a variety of activities including a targeted awareness campaign, a training programme and improvement of data standardisation and management at different levels. One of the purposes of this awareness campaign was to establish and publicise a very sensitive case definition for HPAI suspicion for farmers and paraveterinarians.
The second stage was the development of an active surveillance programme. The first component of this programme was to test a monitoring tool for vaccinated semi-commercial broiler farms. The second component was the establishment of a risk-based surveillance programme, named Community Animal Disease Surveillance (CADS), using a participatory approach for data collection. The design of the CADS programme aims to increase the chance of detecting outbreaks in selected communes: selection criteria for Communes included history of outbreak and risk factors for disease transmission.
Performance indicators have been developed for reporting and active surveillance activities to monitor implementation and also to assess improvements of critical points related to the delays in reporting and the application of proper outbreak investigation for instance.

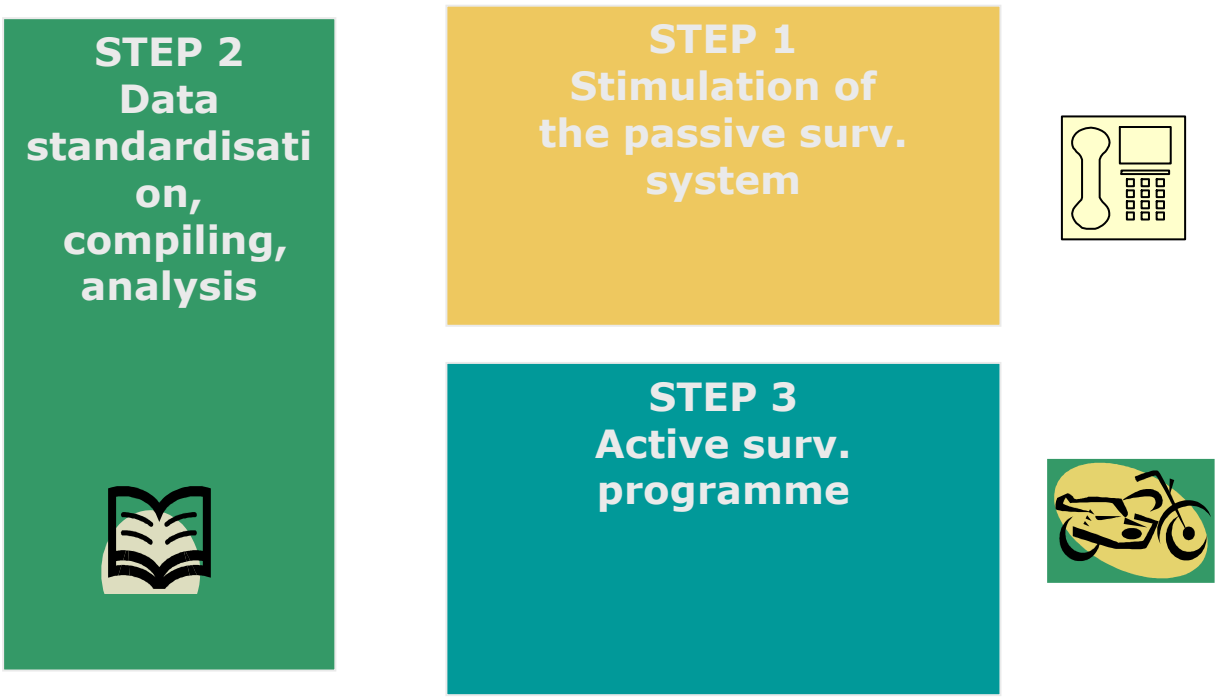

Figure 1. Surveillance model

1.2 Step 1. Stimulation of the surveillance system

1.2.1. Detailed approach

The idea is to **stimulate the current reporting surveillance system** by awareness campaign and by trying to remove some of the identified obstacles for reporting.
The key stone of the awareness campaign was to spread a new case-definition for AI. The objective was to get a very sensitive case-definition where AI is put in parallel with other acute poultry diseases (ND, pasteurellosis and duck plague).
The purposes of diluting AI among other diseases are:

1) to make farmers and paravets understanding they cannot differentiate those diseases from AI and as a consequence, they should report when they suspect any of them;

2) to facilitate the sending of samples by limiting the restraints of political level (cf. the other diseases do not imply strict control measures);

3) to provide an incentive for farmers and paravets by supporting free laboratory testing for the 4 diseases.

The initial evaluation showed that the case-definition used by the field workers was quite specific and probably led to an under-reporting of the HPAI suspect cases (see annex 1 for summary of the initial evaluation). It was then important to **give a simpler case-definition for the first level of the surveillance system**: the farmers and the paravets and to support the DVS in doing a good screening of the suspect cases. To support this screening an investigation guideline was developed (see part 2).

1.2.2. Activities implemented

Classical activities to stimulate the surveillance system (passive reporting) were implemented:

- Training of district veterinarians using role play and game

These trainings implemented at the beginning of the project (from December 2006) aimed at improving the basic knowledge on avian influenza and outbreak investigation of the districts veterinarians (see training objectives in annex 2)

- Training of paraveterinarians, **drug sellers, poultry traders and heads of villages** by district vets

After the districts veterinarians were trained, they were responsible to organise half day trainings at the districts level inviting the key people involved in poultry disease surveillance. They used the communication tools developed by the project and some of the teaching methods proposed during the training.

A training of trainers was also organised by DANIDA for the districts veterinarians of the north provinces to strengthen their capacity to train field workers.

- Set up hotlines when needed

Hotlines were set up in 3 of the provinces, the 4th one already got one. The hotline number was advertised trough the communication tools

- Distribution of **communication tools:** calendars, stickers, leaflets, book note for paravets (see annexe 3 for models).

- Deploy an incentive-based notification system
It was proposed to offer the free laboratory tests for the 3 other main poultry diseases and not only for AI. The possibility to get a laboratory feedback was considered of interest for the paraveterinarians to improve their diagnosis skills and to the farmers to know the disease currently affecting his/her flock. The diseases are those for which the clinical differential diagnosis with AI cannot easily be done: Newcastle disease, pasteurellosis and duck plague.
Unfortunately, it appears that the provincial officers were not always requesting the other diseases diagnosis to the laboratory and as a consequence this system was not fully implemented.

- Census of semi-commercial farms in the pilot districts to strengthen to link between veterinary services and commercial sector (also used to select at-risk communes)

-Lobbying actions towards political levels (district and provincial levels) to support reporting.

The provincial and district veterinarians reported quite rapidly to the project team the difficulties they sometimes encounter with the people committee when dealing with technical matters. They suggested to the project team to organise meeting inviting those leaders to inform them better about the avian influenza disease.
Those meetings were organised by the project team manager. David Hadrill and the national consultants at the provincial and district levels of the 4 pilot provinces.

1.3 Step 2 Data standardisation, compiling and analysis

Models of the forms are provided in annex 4.
Different standardised report formats were proposed in order:

- to limit narrative reports
- to enable the veterinarians to better screen the suspicions: *reporting form*

  This form was introduced to the people receiving the calls from the hotline in order to collect minimal needed information.
- to enable DVS to improve outbreak investigation: *outbreak investigation form and investigation guideline (see part 2)*
- to perform basic data analysis and to spread this information back to the stakeholders to keep them motivated: *feedback form*

This feedback form requests that district veterinarians perform a minimum of data analysis which is very necessary for them to understand the purpose of their activities related to the data collection on animal diseases situation. During the training on active surveillance, the basic calculations to use this form were presented. The final version of this form is a result of discussions during training.

1.4 Step 3 Active surveillance program

1.4.1 Introduction

General objective:
Enhance the overall sensitivity of the HPAI surveillance system by introducing **risk based surveillance activities.**

Specific objectives:
This programme will meet different objectives:

- evaluate the passive reporting system,
- increase the detection of HPAI suspect cases in the targeted areas,
- strengthen the surveillance of the vaccinated semi-commercial farms by testing a surveillance tool for broiler farms

General approach:

This targeted active surveillance programme has two parts:

- a programme targeting the vaccinated semi-commercial farms **disease-free status certification for broiler farms**
- a programme targeting the backyard sector (with a lower vaccination coverage) and based on clinical surveillance: **participatory disease surveillance**

Develop a protocol for Disease Free certification, DFC and Surveillance

Vaccinated broiler semi-commercial farms

Community Animal Disease Surveillance, CADS

Backyard sector (with a lower vaccination coverage)

Figure 2. General approach for the active surveillance component

1.4.2. Component 1: pilot project for Disease Free Certification and surveillance on broiler vaccinated flocks

This activity was developed in cooperation with a pilot project aiming at improve the biosecurity level of 21 pilot farms in Nam Dinh province under the initial idea of Peter van Beek, FAO consultant. In this report, only the work related to the design of a certification and surveillance protocol is presented. Another consultant was responsible for the biosecurity aspects.

Rationale:

For certification purpose
Following a national regulation, the disease-free status approach has been implemented in some provinces for FMD, CSF and ND. This program aims at facilitate the national and international trade for commercial livestock industry (production and transformation). This approach demonstrates of a willing of both the private and public sector to control the major animal diseases and to advertise on this control.
For the poultry sector, only big commercial production units from Ha Tay province have applied and received the certification.
The national regulation includes requirements related to 1) the premises and the production management 2) the evaluation of the vaccination efficiency.
Since the regulation for disease free certification was issued before HPAI occurred in Vietnam, the technical guidelines may need to be reviewed in term of duration (the current 2 years period is probably too long) and protocol.
The pilot project presented here aims at developing a new system for AI disease free certification that could be tested to be used as a base for an update version of the national regulation.

For surveillance purpose
The vaccinated flocks do not have identified sentinel birds neither a standardised protocol to monitor the virus circulation (the national post-vaccination program cover only a very limited number of farms). Then, it is expected that virus is circulating in this sector at a low level and without major clinical evidence. That is why it is proposed to have a targeted programme for this sector involving the exploration of seroconversion in flocks.

Targeted population:

In a first phase, **sector 3 vaccinated[1] broiler farms** will be targeted because:
- it is feasible to improve significantly the biosecurity level of this type of farms
- they pose a higher risk in term of disease dissemination than layer farms.

Proposed criteria for inclusion: more than 300 broiler chickens purely meant for meat production[2] (breeding period should be less than 3 months)

In a second phase, layer farms could be included in the programme.

[1] The DOC are normally vaccinated with Trovac before being sold
[2] Criteria defined by biosecurity expert, Peter van Beek, because it is linked with the production mode

Nota: No disease-free certification is proposed at this stage for duck farms since they have a low to very low level of biosecurity that cannot be improved easily due to the way they are bred.

Nota about TROVAC vaccinated birds

What we know about immunity against Avian influenza virus (Suarez, 2000)

- The presence of HI titre in poultry is strongly correlated with protection from virulent challenge to viruses of the same subtype.
- Surface protein are the only antigens capable of inducing neutralizing antibody and therefore a protein immune response.

What we know about TROVAC (Swayne, 2000)

- Provide protection against clinical signs and death against a variety of H5 virus (viruses that had between 87,3 to 100% hemagglutinin amino acid sequence similarity with the recombinant vaccine, and represented diversely geographic and spatial backgrounds; i.e. isolated from four different continents over a 38 year period).

Recent findings about TROVAC vaccinated birds (Swayne et al, 2007) :

- They do not produce antibody against NP/M proteins⇨ detection of antibodies against NP/M proteins in AGID or ELISA tests can serve as a serological test to identify infection among the vaccinated population of chickens, i.e., an easy-to-use DIVA strategy.
- The protection can be assessed using homologous antigen (that is the strain that donated the H5 gene to the rFP-H5 vaccine), but other strains give inconsistent results.
- On post-challenge on rFP-H5 vaccinated birds, all strains used for HI test having between 84.4 to 100% amino-acid sequence identity with the HA antigen of the rFP-H5 vaccine, gave positive results with GMT over 8.
- Even with homologous antigen, the response and the antibody titres differ according to the route of vaccination and the inactivation procedure for the HI antigen.

Conclusion and recommendations for Vietnamese context:
Since AGID test is not used in routine in the national laboratories, HI test could be used to detect challenge with field virus on Trovac vaccinated birds.

AI disease free certification for broilers

Background
In the current context, the objective of the national disease control strategy is to control the number of outbreaks and to do so, to have all birds protected with vaccination.
Eradication of the virus is not yet at the agenda.

Since the DOC are vaccinated with Trovac vaccine at the hatcheries, it is not possible to assess the vaccine efficiency at the farm level because of laboratory constraints (immunological answer of Trovac vaccinated birds cannot be assessed with HI test unless the antigen used by the laboratory is similar to the one used in the vaccine; see text box above, Swane, 2007).

Proposed protocol for certification:

Certification can be issued on the basis of:

- Certification of the source of DOC (the DOC must come from an identified source, known to apply vaccination on DOC)
- Control of the number of birds at entry and exit (the initial number of DOC entering into the farm must be similar to the number of broilers sold to market – a maximum of *5 %* difference is admitted (*calculated on monitoring data on 21 farms*).
- In case of mortality over this limit, the veterinary services must have a trace of investigation into the farm and evidence that the birds did not die of HPAI.
- **Minimum biosecurity level** implemented in the farm (see Pilot project) assessed by **a visit two times per year** by the DVS (using checklist)

In outbreak context, it could be necessary to introduce the seroconversion monitoring as an additional tool to certify the status of the farm and also to allow the farmer to get authorisation to move his birds based on the laboratory results.

Results related to the test of the protocol

During the duration of the project, it was not feasible to test this protocol. The objective was only to develop it and to discuss it with different actors in order to propose a realistic protocol to the DAH.

• During the project period, the National consultant en biosecurity was able to measure the mortality rate of 2 production cycles in the pilot farms (n=42 (2 cycles for 21 farms), mean = 3,72 %, min= 0 max =8%, median = 4%). These data helped us to set up a realistic threshold value above which we can consider that abnormal health event occurred in the flocks. This value was set up at 5 %.

• It appeared at the end of the project that due to limitation on good quality DOC supply, the origin of the DOC can not always be guaranteed to the farmers. This means that traders are sometimes using DOC of different sources, lying on the real origin of those DOCs. We do not know if this practice is very punctual or is quite generalised. As a consequence, efforts will have to be made on certification of the DOC supply.

Surveillance in the broiler farms and evaluation of the biosecurity improvements

Background

Because birds vaccinated with Trovac vaccine show a seroconversion only after challenging with the virus, the HI test can be used to prove a contact with field virus.

A surveillance protocol for those vaccinated flocks could increase the chance of detecting the virus circulation within the province by detecting a seroconversion in targeted flocks.

Proposed protocol for surveillance

In each farm/flock, 30 birds per flock can be blood sampled for HI test using H5N1 antigen. It was expected to get either a globally low seroconversion or no seroconvertion at all (see Text box on Trovac vaccinated birds). We wanted to control that the interpretation of the results could be easily implemented (that is to say that the serological titres, if any, should always remain low).

Results:

22 farms in total were blood tested (30 birds per farm) and analysed to check the antibody titres. All samples (510 in total) were negative at a 1:8 dilution with HI test using the A/chicken/Scotland/59 (H5N1) antigen. Thus, it is confirmed that the Trovac vaccinated birds do not show seroconvertion when tested with HI test using the A/chicken/Scotland/59 (H5N1) antigen.

⇨ HI test could be used to follow field virus circulation on Trovac vaccinated birds at 4 or 5 weeks.

Laboratory test are planned under FAO support, this could be confirmed under control conditions.

Protocol for evaluation of biosecurity improvement: cohort study

It was proposed to set up a group of control farms to be monitored and tested for seroconversion at the same frequency as pilot farms Those farms should be selected if possible in the same communes as the pilot farms, with similar management practices as the pilot farms before the project started. The DOC source should be similar in pilot and control farms. The data should be compiled to detect a significant difference in the cumulative incidence between the exposed (=control farms= Biosecurity negative) and non exposed flocks (pilot farms= Biosecurity positive).

Results:

Due to different constraints in the project implementation, and specially a delay in the payment of the provincial veterinarians to perform the activities (long administrative procedures), not all the planned activities were done on time. As a consequence, it is not possible to give any results on the cohort study. Other confounding factors were also detecting in the selection of the control that would have make the comparison difficult.

⇨No conclusion can be drawn on the impact of the project biosecurity measures implemented and the infection risk reduction because of implementation constraints

1.4.3. Component 2 Community Active Disease Surveillance, CADS

Rationale:

Participatory epidemiology, PE, can be used to locate disease outbreaks; we call it Participatory Disease Searching or Participatory Disease Surveillance.
To introduce PE skills for the field veterinarians (the communal head of paravets or the district veterinarians) may help to strengthen the link between the official veterinary services and the key informants of the animal sector. This may improve the routine animal diseases information data flow.
In the current context, it could also be used to assess the passive reporting system.

Targeted population:

The targeted population is made of unvaccinated birds from semi-commercial or backyard sectors in selected villages (mainly animals born between 2 vaccination campaigns)

Selection of the communes:

Communes were selected in each district of the project according to the risk of introduction and dissemination of AI.
The number of communes per district was determined according to the feasibility (human resources constraints) and the geography of the district.

Criteria for selection:

- communes where outbreaks occurred already
- communes with highest concentration of poultry
- communes with main roads
- communes with the biggest live birds markets
- communes with the lowest vaccination coverage for backyard sector
- communes with wetlands known to host wild birds
- commune where active surveillance under national program is not implemented
- communes where smugglings activities are known to happen

The data regarding the criteria presented above were collected from DVS staff during trainings and the communes were selected directly with them taking into account the human resources available and their knowledge of the local situations.

Protocol:

Information on health status of the poultry is collected thanks to interviews of key informants every month by a team of 2 persons (for instance the head of paravets of the selected communes and one district vet) and by direct observations.
The key informants are:

- at least one drug and feeding seller of the selected villages
- heads of selected villages or paravets of those villages

- human health workers of the selected villages
- between 5 to 10 families per village selected

All the interviews are summarised in one form per village per month (see annex 5).

The teams are looking for evidence of outbreaks consistent with HPAI using the case-definition that includes: unusual mortality, sudden death or clinical signs of either AI, ND duck plague or pasteurellosis.
Instead of a formal questionnaire, the team was using a check list of information to collect when organising interviews (see annex 6). When visiting the families, the team was doing direct observations of the poultry.

The outputs of the interviews are summarised as follow:

- in the village visited, no suspect mortality or disease on poultry were reported during the past 4 weeks
- in the village visited, suspect mortality or disease on poultry were reported in the past 4 weeks but the situation is now normal
- in the village visited, suspect mortality or disease on poultry is currently reported.

In the last case, immediate actions have to be implemented. In other cases, the team will send their monthly reports.

The data collected by this mean will be compared with the data collected by the passive reporting system in order to detect under-reporting of sensitive health events.

A detailed work plan was prepared for each province (see annex 7 for an example).

Performance indicators:

PI 1 for programme implementation
Each month, interview records are filled for each village: between 2 and 6 records per month per district are expected. The objective is to have at least 80% of the targeted villages visited.

PI 2 for evaluation of the reporting system
When a village visited reports a suspect mortality or disease on poultry during the past 4 weeks, the information should have been received by DVS by passive reporting. The objective is that at least 70% of the suspect cases detected by active surveillance were also reported by passive reporting (via hotline, direct contact to DVS…)

This PI is finally not applicable since the district vets are usually aware of the villages reporting suspect events since they are asked to investigate them, and they will not choose those villages for the monthly interviews.

PI 3 for evaluation of DVS activity
When a suspect case is detected by the team during the visits, the team must either inform other DVS staff or perform directly a more complete investigation and take samples to confirm or to rule out the suspicion. The objective for this PI is to have 100% of the suspected cases detected by the interviews followed by a complete investigation and samples taken.

Data compiling and analysing

At DVS level, forms are compiled and transmitted to the provincial epidemiology division, responsible for analyses and follow-up.
A follow-up table is proposed in annex 8. It will facilitate the monthly follow-up of performance indicators.

Activities:

April/ Mai 2007:
Training on CADS implementation: 1.5 days / province

A one day and half training program was organised in each of the provinces to review some principles of epidemiology (outbreak investigation and main epidemiological parameter important to report) as well as to introduce and discuss the active surveillance programme with the district veterinarians and paravets (one district veterinarian and one paravet per district). During this training, the participants were exposed to the concept of participatory disease searching and were trained on the way to conduct a semi-structured interview to implement the CADS activity
This training was also the opportunity to select the communes at-risk of AI where the interviews will be performed.
Both the TORs of the trainings and the training reports are presented in annexes 9, 10 and 11.

From April to December:
CADS Surveillance programme implementation
One staff for provincial veterinary services was responsible for:

- following-up the smooth implementation of the programme in the communes,
- organising regular meetings with heads of paravets or district staff to assess the method used on the field
- compiling and analysing the data collected.

The consultant with support of national consultants was responsible to follow-up the performance indicators to monitor the implementation and assist the provincial staff in case of major obstacles.

From march 200: evaluation of the programme

2. Outbreak investigation form and investigation guideline

An outbreak form was proposed at the early stages of the project and feedbacks from district veterinarians were collected during different trainings and field visits. Initially it was proposed to have the outbreak form together with the investigation guideline, it was then decided to separate them both.
Regarding the outbreak form, it was agreed to have it separated in 2 parts: the first one to be completed when visiting for the first time a suspect case and the second one, once the case is confirmed, to collect more epidemiological data.
Upon the request to field veterinarian, a guide on the use of Personal Protective Equipment was also included together with the suspicion level assessment in the investigation guideline. The format of the guideline was adapted to the understanding of the district veterinarians, and the initial decision tree format was left for a more traditional format with the questions following each others without any drawing.

The **objectives of the investigation guideline were**:

- To support the DVS in their recommendations (and their justifications) to the political level
- To recommend pre-emptive culling on the base of sound epidemiological findings and then to avoid abusive pre-emptive culling, source of reluctance to report for farmers)

The 2 documents are presented in annex 12 and 13.

3. Surveillance Data analysis

3.1. HPAI suspect case reports : description

3.1.1. Use of the hotline for reporting suspect health events

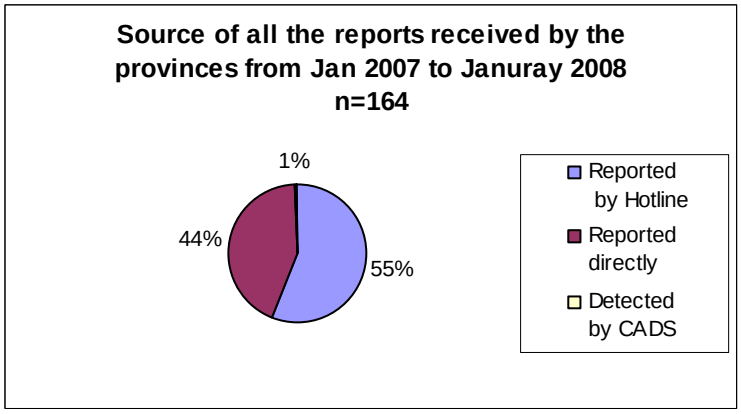

Figure 3. Suspect cases reported classified by source of reporting

• CADS only contributed to 1% of the suspect case reports. This is mainly explained because CADS activity started late after the reporting system was strengthened and suspicions started to be recorded. And particularly, CADS activity in the North started after the main outbreaks wave in April and May 2007.

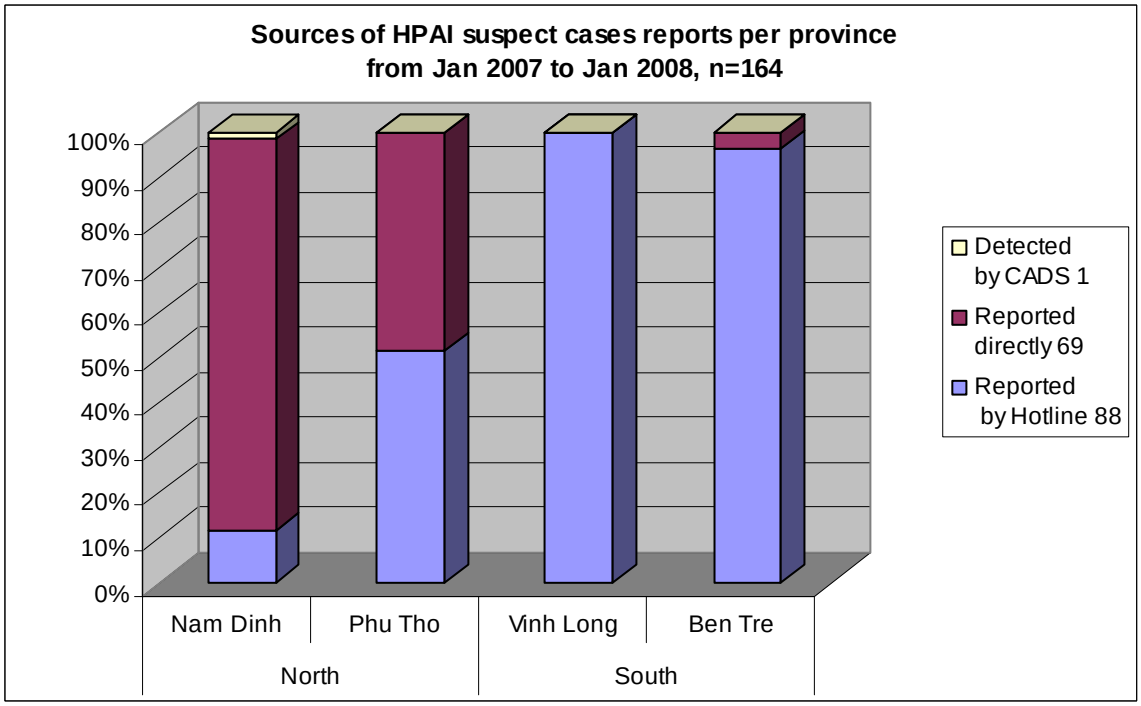

Figure 4. Suspect cases reported classified by source of reporting and by province

• The use of the hotline varies a lot according to the provinces

Possible causes:

- the awareness campaign was done differently (distribution of posters and calendars may have been less efficient in the North province)
- the hotline was already existing in Ben Tre province, so farmers and paravets were already used to it.
- apparently, in some places farmers prefer to contact directly the District Station because they think they will receive support quicker (personal communication from field veterinarians).

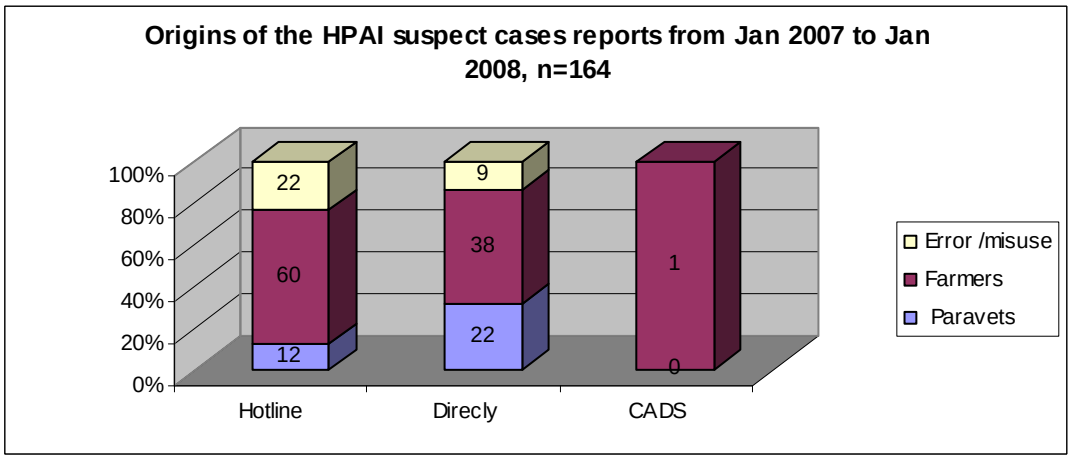

Figure 5. Origin of all the suspect cases reports received by hotline, directly or by CADS

It seems that the **hotline is an interesting tool for farmers**. Probably the paravets know better the District veterinary station and prefer to contact them directly.

3.1.2 Management of the reports received by provincial teams

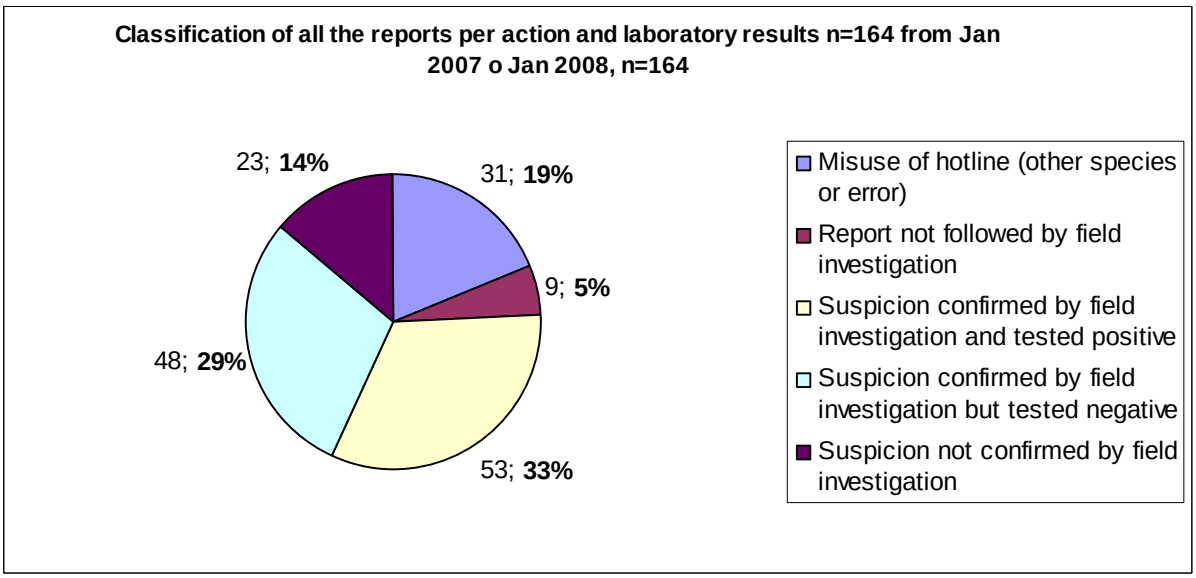

Figure 6. Classification by actions and laboratory confirmation of all the suspect cases reported

Misuse of the hotline may be underestimated because the provincial focal point may not have reported them all. Those **misuses sometimes are real misuses** (jokes) but s**ometimes refer to**

calls about health events related to other species than poultry. This is actually a good side effect of the awareness on poultry diseases reports.

According to the provincial reports received by the project team, most of the suspect cases reported were followed by a field investigation (only 5% were not). After field investigation, some suspect cases were not considered to be an HPAI suspect case and samples were not collected (14%). **This means that most of the reports followed by field investigation were considered as possible HPAI suspect case by field veterinarians**.

Evaluation of the specificity of the districts veterinarians screening

Among the confirmed suspect cases (by field investigation), about half (53 against 48) were then confirmed by laboratory testing. There is an uncertainty about the remaining ones. We should have been able to know how many percentages of those false positives (based on clinical detection) were actually other acute poultry diseases since the project supported the free laboratory testing for 3 other diseases. For unknown reasons, not all AI negative samples were tested for the other diseases, and then we cannot fully evaluate the screening capacity of districts veterinarians.

Nevertheless, with the existing data, we are able to say that **50 % of the field confirmed suspicions were really AI**, which represents a **good specificity of the suspicions screening by district veterinarians.** With the number of samples tested positive for other disease, then the specificity would have been even better since we cannot ask to the district veterinarian to differentiate ND and AI on clinical basis for instance. Then any ND confirmed case represents actually a truly positive case at the field level.

Evaluation of the specificity of the farmers reporting

If we want to calculate the overall specificity of the reporting system, we need to consider the percentage of confirmed suspicions among all the suspicions (excluding errors and misuses). The **specificity of the farmers reporting is then equal to 40% (53/133)**, which is very correct.

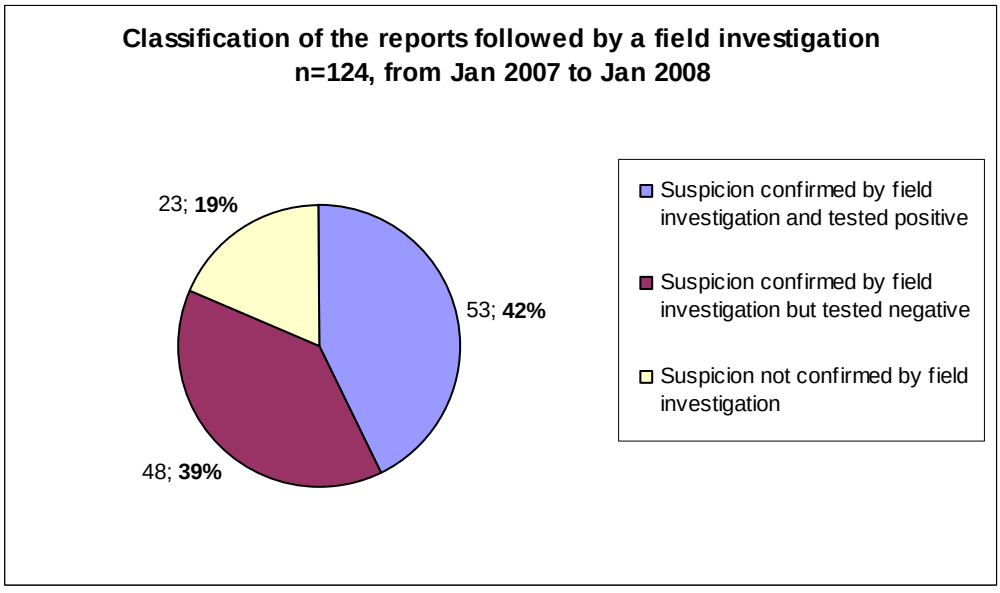

Figure 7 Classification by results of field screening and by laboratory testing of all the suspicions followed by field investigation

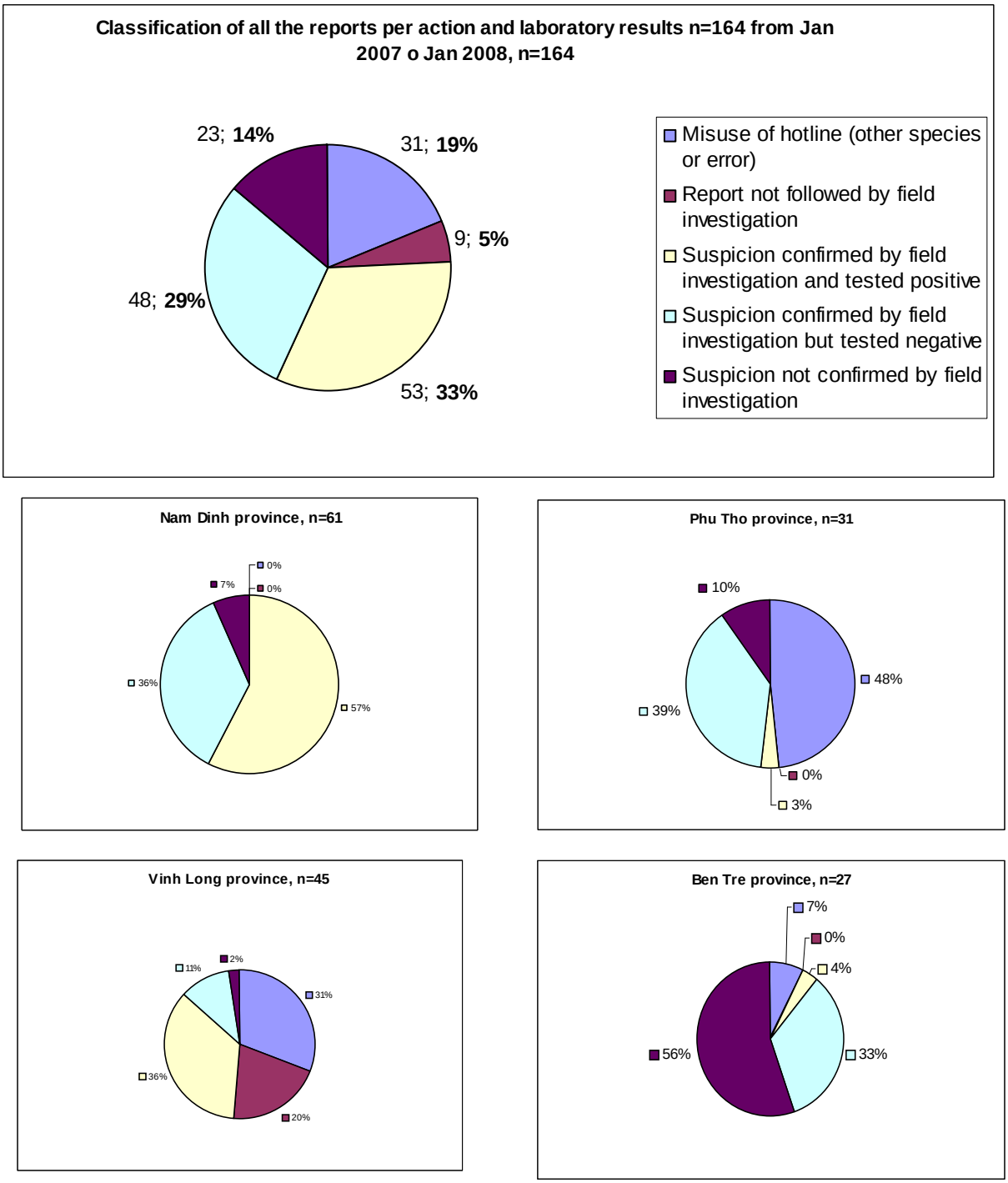

Figure 8. Detail per province of the classification by actions and laboratory confirmation of all the suspect cases reported

• The figure 8 shows that Ben Tre province has a much higher proportion of suspect cases not confirmed by field investigation. In order to be confident with the screening done by the district veterinarians, some suspect cases reported that are not considered to be HPAI after field investigation should be laboratory tested.

• Phu Tho province has the highest proportion of misuses or errors of the hotline. This might be explained because Phu Tho is a province with some remote areas and poor farmers compared to the other 3 provinces. Then, the hotline is may be the only and more convenient way for farmers and paraveterinarians to report health events and to get technical support.

3.1.3 Description of the reporting pattern

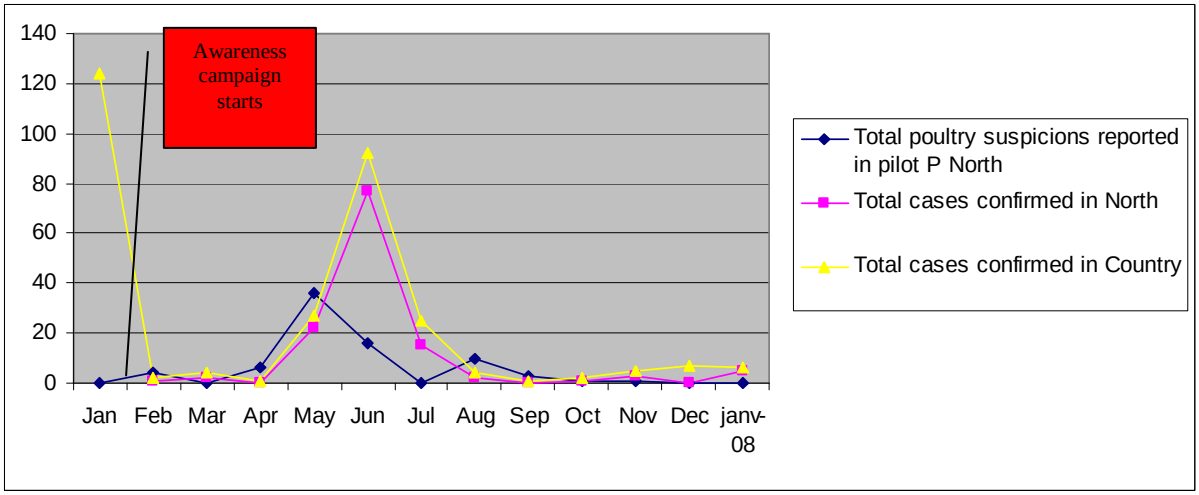

Figure 9. Comparison of the reporting pattern between the 2 pilot provinces in the North, all provinces in the North and all province in the country

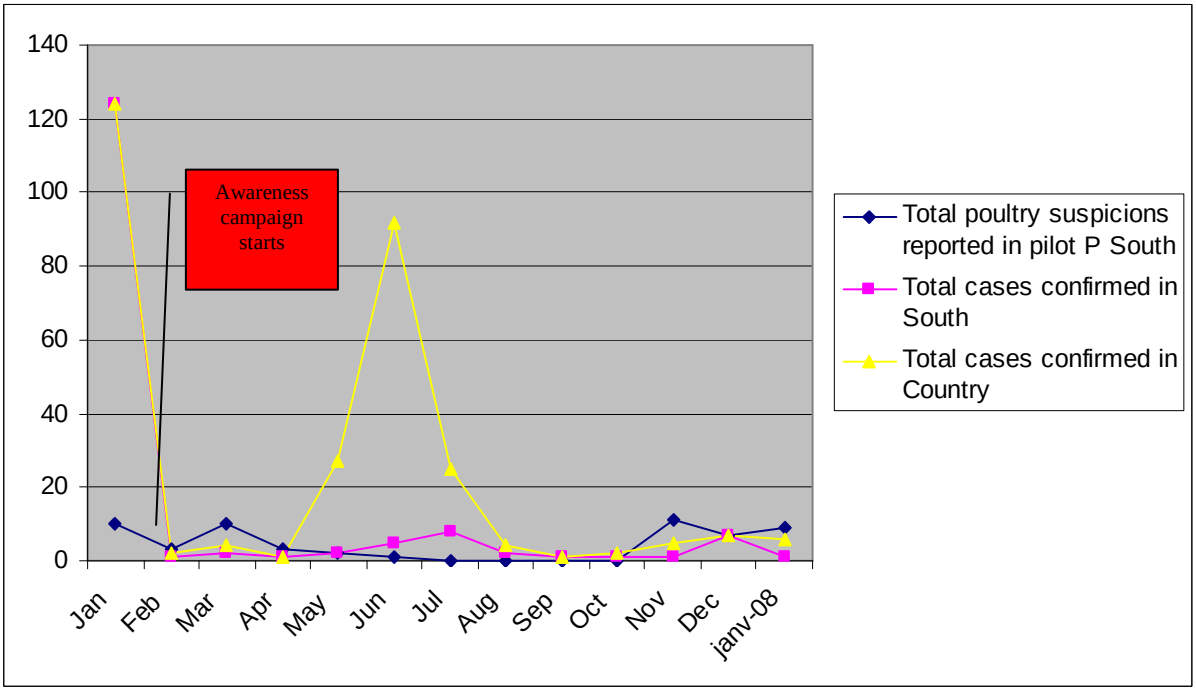

Figure 10. Comparison of the reporting pattern between the 2 pilot provinces in the South, all provinces in the South and all province in the country

By analysing the curve of number of reports received in the 2 pilot provinces in the North and by comparing it with the curves of total H5N1 cases confirmed in the North and in the country (Fig 9) we can make the following hypothesis:
It seems that before awareness campaign starts, very few reports of suspect poultry health event were received, especially during the first peak of outbreak early 2007. The difference observed between the two peaks (with the second peak starting from April, followed by a reporting wave), may be directly due to the activity of the project and/or to the fact that field

actors only feel concerned about the disease when cases are confirmed in their area (the first wave was affecting mainly the South region and the second one mainly the North region). To confirm the impact of the awareness campaign, we can observe that in the South, before the campaign starts, there was not a significant increase of the reporting cases during the peak of outbreaks in the South in December 2006 and January 2007.
Globally, in the South, the pattern is not so clear because the number of confirmed and suspect cases reported remain low all over the year after the initial peak at the beginning of the year.

3.1.4 Performance indicators

Different performance indicators were calculated to monitor and evaluate different components of the surveillance system.
They are presented in the table 1.

General comments:

- the **timeliness of the system is correct** with some improvement still to be done at the laboratory level between reception and deliver of results in case of a suspect case.
- There is still a **problem related to the number of samples collected during the investigations**. This issue was discussed several times during trainings but it seems that veterinarians are still facing some constraints. They are in a difficult situation when backyard farmers do not want to loose too much money by giving their birds, even sick, to the veterinarians. **It is important that district veterinarians are more persuasive especially by mentioning the risk for human health when preparing sick birds for eating.**

Category of activity	Performance Indicators	Total	Nam Dinh	Phu Tho	Vinh Long	Ben Tre
Activity of the district veterinary officers	Percentage of reports on poultry health events followed by field investigation	93.2 %	100%	100%	71%	100%
	Percentage of confirmed suspicions where samples were taken	98%	100%	84.6%	95.5%	100%
	Percentage of field investigation where the investigation form was filled	cannot be assessed				
Rapidity of the investigation and confirmation by laboratory	Time between reports received and field investigation:	1	2.6 days * (min=0 / max=14)	0.7 days (min=0 / max=2)	0.1 days (min=0 / max=1)	0,05 day (min=0 / max=1)
	Time between field investigation and reception of samples at the laboratory:	1.2	1.07 days (min=0 / max=5)	1.7 days (min=0 / max=4)	0.4 days (min=0 / max=2)	1.7 days (min=1 / max=3
	Time between sample reception at the laboratory and results issued	2.2	2 days (min=0 / max=12	2.8 days (min=1 / max=4)	2 days (min=1 / max=7)	1,9 days (min=1 / max=4)
	Number of samples collected		3.8 samples (min=1 / max=16)	2,6 samples (min=0 / max=3)	3 sample (min=1 / max=1)	4.1 samples (min=3 / max=6)

Table 1Performance indicators for the reporting system

* this number is explained by few investigations that were very long to happen during communal election in 2007.

3.2 CADS activity

3.2.1 Qualitative feedback from interviewers

This feedback is a result of meetings with district veterinary officers and provincial focal points.

Field implementation
Globally, the district veterinarians considered the activity useful because it gives them opportunity to have more contacts with farmers and paravets and to get more information on animal health situation (not only poultry).

Depending on the province, the district veterinary station may face some human resources constraints to implement the field visits every month.
The reaction of the informants seems to be positive.
District vets still consider that incentive for farmer is a good thing (disinfectant bag), even if they think they would still participate without this incentive.

The participation of the paravets to the interviews facilitates the interviews because they are people known in the villages.
In some cases, the farmers take advantage of the visit to ask advice about production techniques or treatment for common diseases.

Project management
At the beginning of the CADS activity implementation, the field teams reported very long delay and difficult administrative procedures to get their per diem paid as discussed with the project team. These constraints are directly related to the general administrative procedure between the Department of Animal Health and the provincial Sub-Department of Aninal Health and could have had a strong negative impact on the activity implementation. Thankfully some arrangements were finally found but it should be noticed that the accountancy procedure should be careful prepared and adapted in case such activities are duplicated. We have to emphasize here the efforts done by the SDAH level that accepted to pre-finance the activity to ensure the smooth implementation of the project.

3.2.2. Quantitative assessment

	July	August	September	October	November	December
TOTAL No village visited	100	140	166	163	167	169
Implementation rate	57,5%	80,5%	95,4%	93,7%	96,0%	97,1%
Total No samples collected	0	2	1	2	1	0
Nam Dinh Implementation rate	0	81,3%	95,8%	83,3%	95,8%	95,8%
Phu Tho Implementation rate	20,8%	22,9%	62,5%	68,8%	64,6%	68,8%
Vinh Long Implementation rate	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Ben Tre Implementation rate	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table 2. Implementation rate of CADS activity per month and per province

The implementation rates are calculated by comparing the number of village visited with the number of village that should have been visited. The low implementation rates in Phu Tho during the first months of implementation are due to a misunderstanding regarding the numbers of villages to be monitored.

Note: the activities continued until the end of March but the consultant mission stopped by the end of December.

3.2.3. Lessons identified

In terms of implementation process

The activity was well accepted by the official veterinarians and the national authorities because it was based on the existing structure and did not bring radical changes in their working methods. All activities were implemented under the national veterinary services structure including participation of private paravets from the village community. There was no project team deployed at the field level. This approach has the advantage of being more sustainable since the inputs of the project were very limited but also shows some limitations in term of proper monitoring of the activities.

In case this activity continues, it would be of interest to have a control system in place, by at-random visit of villages where interviews should have been performed.

In terms of project financial input

Motivation of interviewers' teams is identified as a critical point. Indeed, the financial input of the project was determined in a way that the activity could be afforded by the local budget after the project stops. It seems that it was not sufficient in some places to motivate the interviewer teams. The problem lies in the fact that the activity was introduced through a project, thus it was seen by some of the actors as a project activity instead of a normal activity that fall within the normal duty of a district veterinarian team.

In terms of incentive for farmers

Incentive for farmers in case of interview is a general practice in Vietnam. The project did not support the idea, but finally accepted the suggestion made by the district teams to do so. As a compromise, instead of giving money to the interviewees, a disinfectant bag was provided in order to promote hygiene in the farms.

In terms of biosecurity issue

Organising visits of farms presents a risk in term of disease dissemination if basic biosecurity rules are not respected by the interviewers' teams. Appropriate communication, training and monitoring must be organised since even professionals (veterinarians and paravets) do not always see the interest of having those rules respected. In the project, this issue was discussed during the training of the interviewers and concrete proposals were made to limit the risk of contamination between farms, but it seems that the interviewers teams did not always understood the principles of the hygiene precautions.

General conclusion and main recommendations for future planning

The capacity of veterinary services in term of **investigation** was still weak and trainings organised by the project were beneficial. The investigation guideline and form developed could be proposed to other provinces in order to standardise the approach of a HPAI suspect case investigation.

Data flow management in the pilot provinces was not considered as a major problem for disease control. The project only contributed to improve the **standardisation** of the data collected and reported but the data flow is quite fixed and efficient from field level to provincial and national levels. The standardisation is aiming at collecting the only data that can be further processed and analysed. Some of the tools developed in the pilot provinces could be proposed to other provinces.

The key issue in regards to the animal diseases surveillance in general and HPAI in particular is the willingness of key informants to report. This can only be improved by increasing awareness and having a fair compensation policy. The project was only able to contribute to the first point. The **awareness campaign** developed contributed to the increased number of reports in the pilots provinces, even if this is difficult to evaluate to which extend. Some of the **communication tools** such as the sticker, the notebook for paravets, the poster, could be re-used by other provinces after updating. The introduction of a **hotline** also showed some good results and seems to be an interesting tool for farmers especially.

Since the passive surveillance system is probably not sensitive enough to detect all the HPAI suspect cases, there is a **need to support active surveillance** by district veterinarians. The project proposed a **risk based surveillance approach using participatory tools**. This approach was well accepted by field veterinarians and has the advantage of being not so costly. This approach **could be considered for extension using the outputs of the coming final evaluation.**

There is **still a huge effort to be done to make the professionals understanding the needs of having the biosecurity rules respected when visiting farms**. This was an important topic of discussion during the organisation of the active surveillance programme and need to be careful followed up to avoid increasing risk of disease dissemination.

The initial results getting from serological testing of Trovac vaccinated birds showed that **HI test could be used as a monitoring tool of challenge of Trovac vaccinated birds by field virus.** This has to be confirmed by laboratory trials which are planned under FAO umbrella in the coming weeks.

Resources

Desvaux.S. 2007. Final technical report. Surveillance model for Avian Influenza in 4 pilot provinces in Vietnam. FAO, Hanoi, Vietnam.

Mariner C, Jost C. (2006). Immediate assistance for strengthening community based early warning and early reaction to AI in Indonesia.

Mariner C., Admassu B. (2002). Rinderpest participatory disease searching in the Somali ecosystem. Workshop proceedings. Griftu, Kenya.

Ninio C. (2006). Rapport de stage, Contribution de l'épidémiologie participative à l'amélioration du système d'information en santé animale dans le district de Dinh hoa au Vietnam. Montpellier, France.

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Annex 1 Evaluation of the poultry surveillance system - Summary

More details are available from S.Desvaux, Final report December 2006

This assessment was based on:

- personal field visits and meetings,
- needs assessment missions by project managers within the FAO/JTF project for the four pilot provinces,
- reports from other sources (AEIRP project conducted by AVSF in 10 provinces, AILRR project conducted by CARE, CIRAD project in Hoai Duc district, Ha Tay province).

General findings

The current system reveals that in 2006 only few suspicions of HPAI in the South and not one for a long period in the North were reported; this is a clear indication that the system is not working since poultry mortality due to acute diseases generally occurs every years. Either the system did not detect any suspicion which demonstrates a lack of sensitivity in the surveillance system or the system did not report the suspicion(s) which may indicate a problem in the reporting methodology and data management or a politicization of the information related to AI in some areas which make difficult for the surveillance system stakeholders to report.

Investigation of possible causes of the observed system disorders

A general description of the routine and early notification systems is provided in annex 1 of S.Desvaux, final report, Decembre 2006 with identification of main weaknesses and constraints. They are summarised below, following the criteria commonly used to describe a surveillance system for animal diseases.

Sensitivity: % of case detected by the surveillance system among all animals with the disease

The sensitivity of the system cannot be estimated as long as there is no information on the disease prevalence but, if one consider that the incidence of HPAI during the past year was not 0, the sensitivity need to be improved.

Specificity: % of cases without the disease and negative on surveillance among all animal without the disease.

At this time the specificity of the system cannot be estimated since there was no suspect case reported. But it seems that the case-definition used at field level is quite specific which may lead to the risk of under-reporting HPAI cases which do not meet exactly this case-definition.

Timeliness: reporting, investigation and diagnosis made in acceptable delay according to the importance of the disease (contagiousness, impact on animal health or public health)

The timeliness varies according to the places but in average the time between a suspicion is detected by a paravet and a decision of control is around 3 days which is acceptable but could

still be improved. The real constraint is the time a farmer may take before reporting a suspect mortality.
Regarding the delay at laboratory level, it seems that huge improvements have been achieved. The objective of 24 hours between the reception of the sample and the result is a target of the laboratory network.

Representativeness: the data is collected without bias from all types of herd and from all areas.

The representativeness of the current surveillance system for poultry is not adequate. Indeed, the **semi-commercial sector is not properly covered by the existing surveillance models** since all the efforts for the data collection are based on the strengthening of the link between the paravets/head of paravets and the DVS whereas the paravets are not commonly called by the semi-commercial farmers. Thus, there is an important gap in the data collection since a sector, considered at high risk for HPAI transmission, is not fully part of the surveillance system.
The commercial sector is also outside of the current system but poses a smaller risk for AI transmission.

Simplicity: the system must be implementable by all members with their current means and knowledge

In most of the provinces the data has to follow two flows: the administrative one and the technical one. This situation makes the reporting of important health events quite heavy.
Not in every provinces the farmers, paravets or veterinarians have an easily access to phone.
Regarding the data standardisation, it seems that not all the forms are easily adopted by the stakeholders; this may reveal a poor understanding of those medium.
Another important constraint is represented by the limited resources for travel expenses at DVS which limits the possibility and willingness to react in case of suspect case reports.

Flexibility: the system must adapt to unforeseen events

It seems that in urgent situation, the stakeholders are able to adapt the system to report urgently to the above level.

Acceptability: the system must be accepted by the stakeholders

The system is probably not accepted by every stakeholder since it is not known by all of them. There is a need for every stakeholder, and especially to the responsible of the network at commune and district level to be better explained the reporting procedures and more importantly to have their duties clearly defined.

1. Current passive surveillance model for animal diseases

Sources:

- Needs assessment mission, JTF project.
- Baseline KAP study, CARE International in Vietnam, August 2006
- Assessment of the Pre-Tet Information Education and Communication Campaign to fight HPAI in Vietnam, CIRAD 2006
- Rapport de stage, Contribution de l'épidémiologie participative à l'amélioration du système d'information en santé animale dans le district de Dinh Hoa au Vietnam, Camille Ninio, 2006.

1.1 General findings

The commune level: the keystone of the current animal diseases surveillance system

The current surveillance model is based on the reports of animal diseases information collected by the paravets to the commune level (CVB or head of paravets according to the circumstances) and then data transmission following the administrative hierarchy of the veterinary services pyramid.

Even if the transmission within the veterinary services may be more or less efficient according to local constraints, there is no major technical obstacle to get the data from the district to the SDAH and then to the DAH. On the other hand the way the data is collected on the field and how it is transmitted may take very different forms with very different results. Thus, the commune level is identified as the keystone of the system.

Early notification is part of the current model

It seems clear to a part of the stakeholders that HPAI need to be reported on an urgent way. Then the concept of early notification is part of the surveillance system.

Annex 2. TORs for the trainings on detection and reporting

1. Objectives of the training

TOT for DVS staff at provincial level

Objectives:

- Update knowledge on AI detection (case-definition)
- Remind procedure for reporting
- Remind procedure for investigation (introduce and discuss the decision tree and the outbreak investigation form)
- Inform on the need for data standardisation and introduce and discuss the recording book
- Provide pedagogical aids and provide pedagogical techniques for DVS being able to organise training for paravets and sellers
- Present and discuss the messages to be passed to the paravets and sellers
- Introduce the communication tools (book note, sticker, poster and leaflet) to be used during training at district level
- Practical training on necropsy and sampling

Training at district level for paravets, drugs sellers and feeding sellers (by DVS after a TOT)

Objectives:

- strengthen link between all paravets at commune level
- inform on the way to report on routine basis and at emergency
- give recommendations on the way to communicate to farmers and how to convince them to report in case of unusual mortality in poultry
- standardise the information collected by paravets on animal heath events

2. Proposed agenda for DVS training

Proposed Agenda of day 1 – HPAI Updates

Time	Topics
8 h 30 – 12 h 00	• General introduction (10 min) • Vaccination consequences (15 min) • Case definition and detection (10 min) • Case confirmation and Investigation (40 min) • Coffee break (15 min) • Reporting (15 min) • Control (40 min) • DVD projection on Vaccination techniques (20 min) • Discussion
12 h 00 – 13 h 30	LUNCH TIME
13 h 30 – 17 h 00	• Autopsy practice (1 hour) • Sampling (30 min) • Coffee break (15 min) • Data standardization with group discussion (1 hour 30)

	• Evaluation (20 min)

- **Proposed Agenda of day 2 – Training of Trainers**

Time	Topics
8 h 30 – 12 h 00	• Case definition for farmer (30 min) • Presentation of communication tools and reporting (1 h) • Introduction of book note for paravets and DVS – Arabic phone (1 h)
12 h 00 – 13 h 30	LUNCH TIME
13 h 30 – 17 h 00	• Messages for farmers – Play Role (1 h) • Prepare an agenda for training at district level (45 min – 1 h) • Discussion

3. Training organisation

Training of DVS staff

The training on reporting will be part of two-days training covering as well the sampling techniques and the outbreaks containment procedures.

One training session will be organised in each project provinces.

The trainers will be the two national consultants and the two international consultants on field operations.
The consultant will assist for the first training in the North in order to test the pedagogical tools proposed.

Training of paravets, drug and feeding sellers and poultry traders

2 or 3 trainings will be organised in each district in order to cover all the communes of the district.
The DVS staff trained at SDAH level will be responsible to organise and implement the trainings.
The national and international consultants will supervise the first trainings done by DVS staff.

4. Evaluation

Two evaluations will be done:

- evaluation of the training by the participants
- evaluation of the participants

The evaluation forms will be drafted by national consultant with support of international experts

5. Messages and information to be conveyed to the District Veterinary officers

AI detection / Case-definition:

⇨The vaccination campaign was successful in Vietnam, the epizooty stopped.
⇨If HPAI outbreaks happen it will be not so extended as it was before since a part of the domestic poultry is protected against the virus.
⇨The full list of typical clinical signs will never be observed on a single animal. It is possible to observe some of the typical clinical signs at the outbreak level (not individual level)

⇨ HPAI may have different levels of clinical expression (from per acute to acute) and the clinical expression on vaccinated birds might be very limited.
⇨ HPAI cannot be differentiated from NCD on clinical basis
⇨ the case-definition for farmers must be as simple as possible and must assure that the main acute poultry diseases are reported as well
⇨ if farmers or paravets are reporting suspected cases that are confirmed to be NCD, this will mean that the surveillance network is working properly

Confirmation of a suspicion

⇨DVS must be able to confirm or deny a suspicion of HPAI based on standardised epidemiological criteria
⇨A suspicion may have different levels: highly suspect case, moderate or low suspect case
⇨ Present the decision tree and discuss it.

Investigation of an HPAI suspected case

⇨ In case a suspicion is confirmed, it is important to try to identify the cause of the outbreak: where the virus is coming from?
⇨ Present and discuss the outbreak investigation form.

Data standardisation
⇨ Information need to be recorded to assure quality and appropriate management
⇨ Introduce the recording book to be used to record suspicion reports for DVS and SDAH

Data analysis
⇨ In order to motivate people involved in surveillance activities, it is important that a feedback is organised
⇨ Discuss on a possible medium for information feedback at district level

6. Message the DVS have to convey to the paravets, drugs and feeding sellers and poultry traders.

The case-definition for AI must be presented and explained
The vaccination provides a good protection for clinical expression of the disease but does not prevent totally virus circulation, so it is still important to suspect AI.
Reporting an important animal health event, such as AI, is important because:

- if the disease is contagious, it may affect all the animals of the village
- if the disease is dangerous for the human health, it is needed to destroy the animals and to carry out disinfection by skilled teams from the district veterinary stations.
- it is under the regulation that animal health stakeholders have to report suspicion of regulated diseases.

Where and how can you report?

- by contacting the head of the paravets at the commune or the head of the village
- by phoning directly to the DVS or by using the hotline

Which information you need to transmit?

- the exact place you have seen the suspect case
- your contact

- the information on the disease: when it start / how many animals are sick or died / the main signs observed
- Possibly: if there are houses or farms around with the same kind of problem

7. Pedagogical techniques proposed

Course and meeting (Cognitive domain)

At SDAH, course and briefing will be organised using power point presentations prepared by national consultant with assistance of international experts.

At commune level, the DVS will use A0 format paper as medium for their message.

Additional aids:
Posters, leaflets and stickers will be distributed to drug and feeding sellers
Leaflet, stickers and book note will be distributed to paravets
Leaflet and stickers will be distributed to poultry traders

Group discussion on data standardisation

20' discussion for each group and 40' general discussion

The participants are divided into 3 groups and are asked to write their main findings on a board.

Group 1:
Which information you should collect when you receive a call for a suspect mortality on animals
(objective: validate the recording book by taking into account inputs from working group)
Group 2
Which forms are you using from commune to district and from district to province? Are they all similar in every districts?
Are they easy to fill? What are your suggestions for improvement?
(Objectives: to assess the practices and to make the different districts aware about those practices + illustrate the difficulties for provincial and national level to deal with different kind of data collection formats)
Group 3
Which information on the animal health situation of your district could be interested to distribute to the communes every month (to head of paravets for instance)? How could you present those data?
(objective: validate the monthly feedback format for district by taking into account inputs from working group)

Play Role and game (Psycho-emotional domain)

For DVS TOT: **Play Role: how to communicate with farmers and PC (45mn)**

Objective: put the participants into situation to check if they will use what they have been told during the training.

There are 5 different roles. The participants will select at random a piece of paper where their role will be written.

1 participant:
You are a farmer and you have called a paravet because you found dead chickens for 3 days in your farm. You want to have your chickens cured because you have a wedding soon and you need to kill some chickens for preparing the meal.

1 participant:
You are a paravet. You have been called by a farmer because of unusual mortality on his local chicken. You have heard about AI and you try to convince the farmer to declare the mortality. If he agrees, you will call the district station

1 participant:
You are a vet at sub-DAH in charge of receiving call from hotline. The paravet is calling you. You ask him information and then you contact the DVS.

1 participant:
You are a district vet. You have been called by the paravet to visit a farm where you have suspect mortality. You will go to visit this farm and once you have finish in the farm, you will go to discuss with the PC to inform them and suggest some control measures.

1 participant
You are the responsible of agriculture affairs at the village People Committee.

2 participants:
You will observe what the paravet is doing. You will note what is good and what is not good on the way he is talking to the farmers and on the information he is giving to the district vet

2 participants:
You will observe what the district vet is doing. You will note what is good and what is not good:

- on the way he is talking to the farmers, to the paravet and to the PC
- on the information he is giving to the district vet
- on the materiel he took with him when visiting the farm
- *Arabic phone (45mn):*

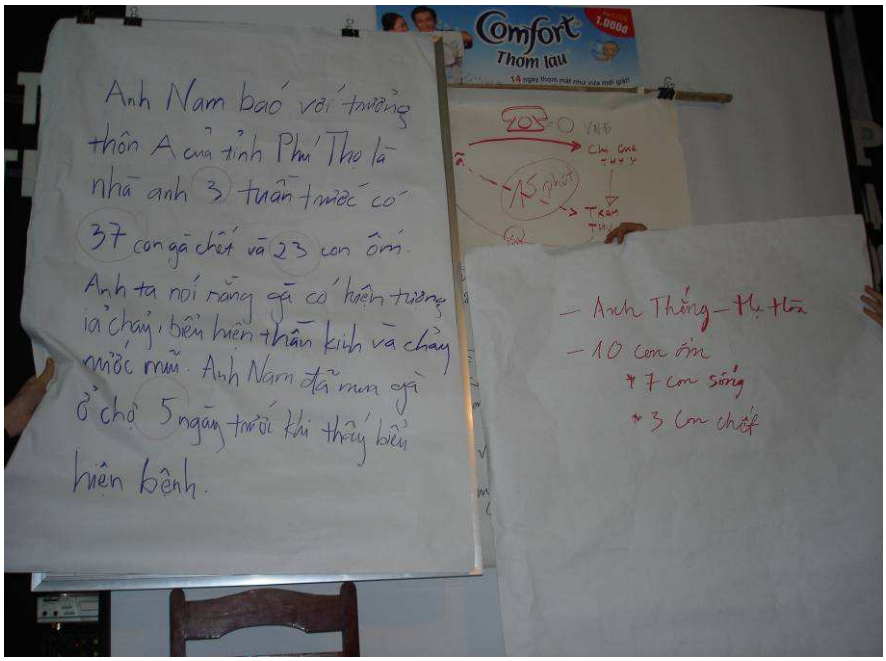
2 participants
You will observe what the sub-DAH vet and you will note what is good and what is not good when he receives the call from paravet and when he informs the district vet.

For paravets, drugs and feeding sellers and poultry traders: **Arabic phone can be done to introduce the book-note**.
Description
The group of participants is out of the classroom
One participant is invited to enter. The trainer is telling him a story about an animal health event. Then a second participant is invited to enter. The first participant is telling him the story he was told.
A third participant is invited to enter, he/she is told the story by the second participants (the first participants is not allowed to say anything) and so on.

The objective of this game is to illustrate that data transmission need to be standardised and on paper medium in order to be respected! This is a good introduction for the recording book for the DVS or the book-note for paravet.

Pictures of training in Phu Tho

Result of arabic phone (to the left = initial story, to the right = final story)



Working group discussion and feedback

Annex 3 Communication tools developed by the project distributed during trainings at district level

Those communication tools result from a common work of the project team.

Sticker

Targeted population: all paravets of the pilot areas + poultry traders attending training + people committee of communes and districts
Distribution procedure: by DVS during training in districts

Leaflet

Targeted population: one for every paravets of the pilot areas + 30 per drugs and feeding shops + one per poultry traders + 1 per people committee
Distribution procedure: by DVS during training in districts

Calendar

Targeted population: every paravets of the pilot areas (10/paravets) + drugs and feeding sellers (30/shops) + poultry traders (1/trader) + people committees

Distribution procedure: by DVS during training in districts

Annex 4 Model of standardised forms developed

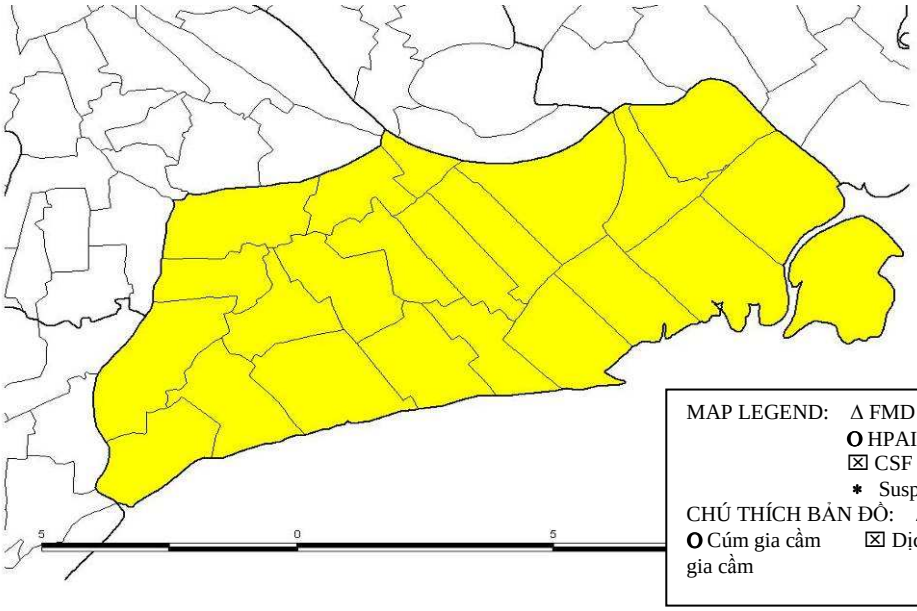
MONTHLY FEEDBACK OF ANIMAL DISEASE SITUATION

THÔNG BÁO TÌNH HÌNH DỊCH BỆNH GIA SÚC, GIA CẦM HÀNG THÁNG

Từ ngày:…….. Đến ngày: …….

STT	Dịch bệnh	% số xã có dịch bệnh (% và a/b)	% tổng số hộ CN bị nhiễm (% và a/b)	Số hộ CN mới bị mắc trong tháng	% tổng số động vật chết mắc bệnh (% và a/b)	Ghi chú
	Diseases	*Percentage of the infected communes (% and a/b)*	*Percentage of infected farms (% and a/b)*	*Number of newly infected farms during the month*	*Percentage of total dead animals (% and a/b)*	*Notes*
I-	**Bệnh trâu, bò**					
1.	Lở mồm long móng					
2.	Tụ huyết trùng					
3.	Nhiệt thán					
4.	Bệnh khác					
II-	**Bệnh lợn**					
1.	Lở mồm long móng					
2.	Dịch tả lợn cổ điển					
3.	Tụ huyết trùng					
4.	Phó thương hàn					
5.	E.coli					
6.	Xoắn khuẩn (Lepto)					
7.	Bệnh khác					
III	**Bệnh gia cầm**					
1	Cúm gia cầm					
2	Niu cát xơn					
3	Gumboro					
4	Dịch tả vịt					
5	Tụ huyết trùng					
6	Bạch lỵ					
7	Bệnh khác					
IV	**Bệnh chó, mèo**					
1	Dại					
2	Ca rê					

GHI CHÉP KHÁC:



MAP LEGEND: Δ FMD **X** Newcastle disease
O HPAI ⊗ Rabies
☒ CSF
* Suspect mortality on poultry, ect.
CHÚ THÍCH BẢN ĐỒ: Δ Lở mồm long móng **X** Niu cát xơn
O Cúm gia cầm ☒ Dịch tả lợn * Nghi ngờ hiện tượng chết trên gia cầm ⊗ **Dại**

Minimum data to be collected when a call for a suspicion is received

The model is based on a form developed under AIERP project by AVSF

Date :	**Time :**	**Recording Number:**			
Name of the person receiving the notification		**Function:**			
The information is coming from ☐ The hotline ☐ direct call/visit from ☐DVS farmer visit ☐ Other: ……..					
Contact details of the person notifying:					
Name of the person notifying:		Profession:			
Address:					
Commune:		Phone nb where this person can be called:			
Contact details of the farm suspected					
Name of the owner:					
Address of the farm:					
Commune		Phone number where the farmer can be called:			
Description of the farm:					
Species infected:	Chicken	Duck	Pig	Cattle	Other:
Other species in the farm	Chicken	Duck	Pig	Cattle	Other:
Description of the problem:					
Number of animals present: exact nb…….. ☐or <50 ☐ Between 50 and 100 ☐ >100 ☐ > 500 ☐ > 1000					
Number of animals infected:					
Date of the first symptoms:					
Brief description of the problems observed:					
Other farms in the neighborhood					
Possibly infected:		Non infected:			
☐ No information					
Additional comments (control actions done so far?):					
Farm visited	**Yes / No**		**Date of the visit:**		**Time of the visit:**
If no, justification:					

Annex 5. CADS – Monthly reporting form for district veterinarians

Summary of monthly sentinel villages interviews

Name of sentinel village: Commune: District:
Name of interviewer Date:

Interview at drug shop

General feedback

Poultry disease was mentioned ☐ by the informant ☐ by the interviewer

Interviews of ☐ Head of village or ☐ paravet

General feedback

Poultry disease was mentioned ☐ by the informant ☐ by the interviewer

Interview of human health worker

General feedback

Interviews of families

Number of families interviews:

Name	Contact (phone if any)	Name	Contact (phone if any)

General feedback (including direct observation)

GENERAL CONCLUSION ON THE VILLAGE SITUATION:

☐ in the village visited, no suspect mortality or disease on poultry were reported in the past month
☐ in the village visited, suspect mortality or disease on poultry were reported in the past month, but the situation is now normal
☐ in the village visited, suspect mortality or disease on poultry is currently reported.

Tóm tắt phỏng vấn các thôn chỉ báo hàng tháng

Tªn th«n chØ b¸o: X·: HuyÖn:

Tªn ng-êi pháng vÊn

Pháng vÊn cöa hµng thuèc

Ph¶n hải nãi chung

Bệnh gia cầm được đề cập ☐ bởi người được hỏi ☐ bởi người phỏng vấn

Pháng vÊn ☐ Tr-ëng th«nhoÆc ☐ thó y viªn

Ph¶n hải nãi chung

Bệnh gia cầm được đề cập ☐ bởi người được hỏi ☐ bởi người phỏng vấn

Pháng vÊn c¸n bé y tÕ

Ph¶n hải nãi chung

Pháng vÊn hé gia ®×nh

Sè gia ®×nh pháng vÊn

Tªn	Liªn hÖ (®Þen thoı¹i nÕu cã)	Tªn	Liªn hÖ (®Þen thoı¹i nÕu cã)

Ph¶n hải nãi chung (bao gåm c¶ quan s¸t trùc tiÕp)

KẾT LUẬN CHUNG VỀ TÌNH HÌNH CỦA THÔN:

☐ Ở thôn kiểm tra, không có bệnh gia cầm hoặc tỷ lệ chết nghi ngờ tháng trước.

☐ Ở thôn kiểm tra, tháng trước có bệnh gia cầm hoặc tỷ lệ chết nghi ngờ nhưng tình hình hiện nay bình thường.

☐ Ở thôn kiểm tra, đang có bệnh gia cầm hoặc tỷ lệ chết nghi ngờ.

Annex 6. CADS – Checklist for interviewers

Organisation of the monthly interviews in sentinel villages

General recommendations:

The interviewer must introduce him/herself and explain the village has been selected to be under monitoring for animal health diseases.

The interviewers must be careful not to communicate their interest in AI to the respondents: they should not ask direct questions about avian influenza at the beginning of the interviews.

The interviews must be introduced as a general study of animal diseases issues in the village.

The interviewers can introduce general questions about rumours and when a rumour about abnormal poultry diseases is reported, he must try to locate the origin of the rumour using a map if necessary.

At the end of the interview, if the respondent did not mention about poultry mortality or AI, the interviewer can inquire directly about it.

Check list for interview at the drug shop

Discuss on the current animal diseases problem in the village.

The interviewer can ask to the seller if he/she sold a lot of antibiotic during the past month and try to understand for which species. If poultry is mentioned, the interviewer can try to understand if the seller was explained the problem and if it seems to be usual for him/her or not.

If nothing is mentioned about poultry, at the end of the interview a direct question about poultry diseases can be asked: does the seller heard about any problem around on poultry?

Check list for interview of paravets or head of village

The interviewer can ask to the chief of village or the paravet what are the main animal diseases problems they are facing at this moment.

If poultry disease is mentioned, try to locate the problem in the village (in this case, the area indicated must be selected for the family's interviews).

If nothing is mentioned about poultry, at the end of the interview a direct question about poultry diseases can be asked: does the chief of village or the paravet heard about any problem around on poultry?

Check list for human health workers

The interviewer can ask directly if the human health workers heard about suspect poultry diseases in the village and if so, the interviewers will try to locate the origin of the problem.

Check list for interviews of families

When visiting the families, the interviewer must leave his/her shoes outside of the compound.

Selection of the families

10 families should be selected at random. Start from the market place (if any) or the head of village house and goes in 4 different directions (north, south, east and west). Each month, the families must be different.

For instance the first month, you will select one family every 10 houses. Next month, one family every 17 houses (select a figure at random from 1 to 20). If one family does not have poultry, goes to the neighbour one.

Interviews

The interviewer must ask general questions on the animal species present in the farm to be sure there are poultry (do not ask directly if they have poultry, but ask if they have domestic animals)

To cross check the answer of the family, the interviewer can ask if the family recently bought veterinary medicines, if yes, the interviewer must explore the reasons.

The interviewer can start the discussion on the animal diseases the family has faced recently. If poultry diseases are mentioned the interviewer must try to explore the symptoms and the morbidity and mortality rate. From the answers he gets from the family, the interviewer must decide if the description fits with an AI suspicion:

- sudden death is described on some poultry for more than one day
- the number of dead or sick poultry is unusual and last for more than 1 day
- the symptoms fit with AI, ND, pasteurelosis or duck plague.

Direct observations

When doing the interview, the interviewer must try to observe the poultry. If any signs of sickness is observed, the interviewer must try to investigate the duration of the diseases (since when the animals are sick) and if there is any mortality.

If a contagious disease is suspected, the interviewer must try to collect samples (swabs on the diseased birds or carcasses).

If so, it must be explained carefully to the farmer the purpose of the sampling: the samples will be sent to the laboratory for testing the main poultry diseases. The farmers will receive the result the following month if nothing important is found. Otherwise, he will be visited by the veterinary authorities to help him to solve the problem and to avoid having the disease spread over the village.

Tæ chøc pháng vÊn hµng th¸ng ë c¸c th«n chØ b¸o

H-íng dÉn chung:

Ng-êi pháng vÊn ph¶i giíi thiÖu b¶n th©n vµ gi¶i thÝch lý do t¹i sao th«n ®-îc chän ®Ó theo dâi dÞch bÖnh ®éng vËt.

Ng-êi pháng vÊn ph¸i rÊt thËn träng khi hái vÒ Cóm gia cÇm: kh«ng nªn ding c©u hái trùc tiÕp ®Ó hái vÒ Cóm gia cÇm ngay lóc b¾t ®Çu pháng vÊn.

Cuéc pháng vÊn ph¶i ®-îc thùc hiÖn nh- mét nghiªn cøu chung vÒ bÖnh ®éng vËt trong th«n, xãm ®ã.

Ng-êi pháng vÊn cã thÓ ®-a ra c¸c c©u hái chung chung vÒ c¸c tin ®ån vµ khi cã tin ®ån vÒ bÖnh gia cÇm kh«ng b×nh th-êng, c¸n bé ®iÒu tra ph¶i x¸c ®Þnh nguån gèc tõ tin ®ån, nÕu cÇn thiÕt th× sö dông b¶n ®å.

Cuèi buæi pháng vÊn, nÕu ng-êi ®-îc hái kh«ng ®Ò cËp ®Õn tû lÖ gia cÇm chÕt hoÆc Cóm gia cÇm, ng-êi pháng vÊn cã thÓ ®-a ra c©u hái trùc tiÕp.

B¶ng ®¸nh dÊu dïng cho pháng vÊn ë cöa hµng thuèc thó y.

Th¶o luËn nh÷ng vÊn ®Ò vÒ bÖnh ®éng vËt hiÖn nay trong th«n.

Ng-êi pháng vÊn cã thÓ hái ng-êi b¸n thuèc r»ng anh/chÞ cã b¸n nhiÒu thuèc kh¸ng sinh trong th¸ng tr-íc kh«ng vµ cè t×m hiÓu cho nh÷ng loµi ®éng vËt nµo. NÕu lµ gia cÇm, ng-êi pháng vÊn cÇn hái ng-êi b¸n xem ®ã lµ vÊn ®Ò g×, vµ anh/chi ta cã gÆp th-êng xuyªn hay kh«ng.

NÕu gia cÇm kh«ng ®-îc ch¾c ®Õn, cuèi buæi cã thÓ hái trùc tiÕp vÒ bÖnh gia cÇm nh-: Anh/chÞ cã nghe they vÊn ®Ò g× vÒ gia cÇm kh«ng?

B¶ng ®¸nh dÊu dïng cho pháng vÊn thó y viªn hoÆc tr-ëng th«n.

Ng-êi pháng vÊn cã thÓ hái tr-ëng th«n hoÆc thó y viªn vÒ c¸c vÊn ®Ò liªn quan ®Õn bÖnh ®éng vËt chÝnh hä ®ang gÆp trong thêi ®iÓm hiÖn nay.
NÕu cã bÖnh gia cÇm, cè g¾ng x¸c ®Þnh khu vùc trong th«n ®ã cã vÊn ®Ò (tr-êng hîp nµy, xuèng pháng vÊn trùc tiÕp gia ®×nh ch¨n nu«i cã vÊn ®Ò).
NÕu kh«ng cã vÊn ®Ò víi gia cÇm, cuèi buæi pháng vÊn cã thÓ hái trùc tiÕp vÒ bÖnh gia cÇm nh-: tr-ëng th«n hoÆc thó y viªn cã nghe thÊy cã vÊn ®Ò víi gia cÇm kh«ng?

B¶ng ®¸nh dÊu dïng cho pháng vÊn c¸n bé y tÕ

Ng-êi pháng vÊn cã thÓ hái trùc tiÕp c¸n bé y tÕ cã nghe thÊy bÖnh gia cÇm nghi ngê trong th«n kh«ng, nÕu cã ng-êi pháng vÊn cè g¾ng x¸c ®Þnh khu vùc cã vÊn ®Ò.

B¶ng ®¸nh dÊu dïng cho pháng vÊn hé gia ®×nh.

Khi xuèng hé gia ®×nh, ng-êi pháng vÊn ph¶i ®Ó giµy dÐp bªn ngoµi khu vùc ch¨n nu«i.

Lùa chän gia ®×nh ®Ó pháng vÊn

Chän 10 hé gia ®×nh mét c¸ch ngÉu nhiªn. B¾t ®Çu tõ khu vùc chî (nÕu cã) hoÆc nhµ tr-ëng th«n vµ ®i theo 4 h-íng (b¾c, nam, ®«ng, t©y). Mỗi tháng, phỏng vấn các hộ gia đình khác nhau.
Ví dụ tháng đầu tiên, bạn chọn cách 10 nhà thì chọn 1 hộ để phỏng vấn. Tháng sau, cứ cách 17 nhà thì bạn chọn 1 hộ để phỏng vấn (chọn số ngẫu nhiên từ 1 đến 20). Nếu gia đình nào không nuôi gia cầm có thể phỏng vấn nhà hàng xóm.

Pháng vÊn

Ng-êi pháng vÊn hái c¸c c©u hái chung vÒ c¸c loµi ®éng vËt cã trong trang tr¹i ®Ó ch¾c ch¾n cã gia cÇm hay kh«ng (kh«ng hái trùc tiÕp cã gia cÇm, chØ hái cã nu«i con g× kh«ng).

Gạch chéo các câu trả lời, người phỏng vấn có thể hỏi chủ hộ gần đây có mua thuốc thú y không, nếu có, cần tìm hiểu lý do.

Người phỏng vấn có thể trao đổi với chủ hộ về những bệnh động vật của gia đình hiện nay. Nếu bệnh gia cầm được đề cập đến, cần tìm hiểu triệu chứng, tỷ lệ mắc, tỷ lệ chết. Từ các câu trả lời của chủ hộ, người phỏng vấn có thể mô tả một số đặc điểm nghi ngờ Cúm gia cầm như:

– Một số gia cầm chết đột ngột trong nhiều hơn 1 ngày.
– Số gia cầm ốm hoặc chết không bình thường và xảy ra nhiều hơn 1 ngày.
– Triệu chứng giống với Cúm gia cầm, Niu cát xơn, Tụ huyết trùng hoặc Dich tả vịt.

Quan s¸t trùc tiÕp

Khi phỏng vấn, nhóm công tác phải quan sát gia cầm. Nếu thấy có dấu hiệu gia cầm ốm, cần điều tra quá trình bệnh (gia cầm bắt đầu ốm từ khi nào) và có gia cầm chết không.

Nếu nghi ngờ bệnh truyền nhiễm, người phỏng vấn cần lấy mẫu (ngoáy dịch con ốm hoặc lấy nguyên con chết).
Nếu lấy, phải giải thích cẩn thận cho chủ hộ về mục đích lấy mẫu: mẫu bệnh phẩm sẽ được gửi đi xét nghiệm những bệnh chính của gia cầm. Chủ hộ sẽ nhận được kết quả trong tháng tới nếu không phát hiện thấy vấn đề gì quan trọng. Ngược lại cơ quan thú y có thẩm quyền sẽ đến giúp gia đình giải quyết vấn đề và tránh bệnh lây lan sang các nhà khác trong thôn.

Annex 7. CADS – Detailed provincial work plan

FAO Avian Influenza Programme in Vietnam

OSRO/RAS/602/JPN

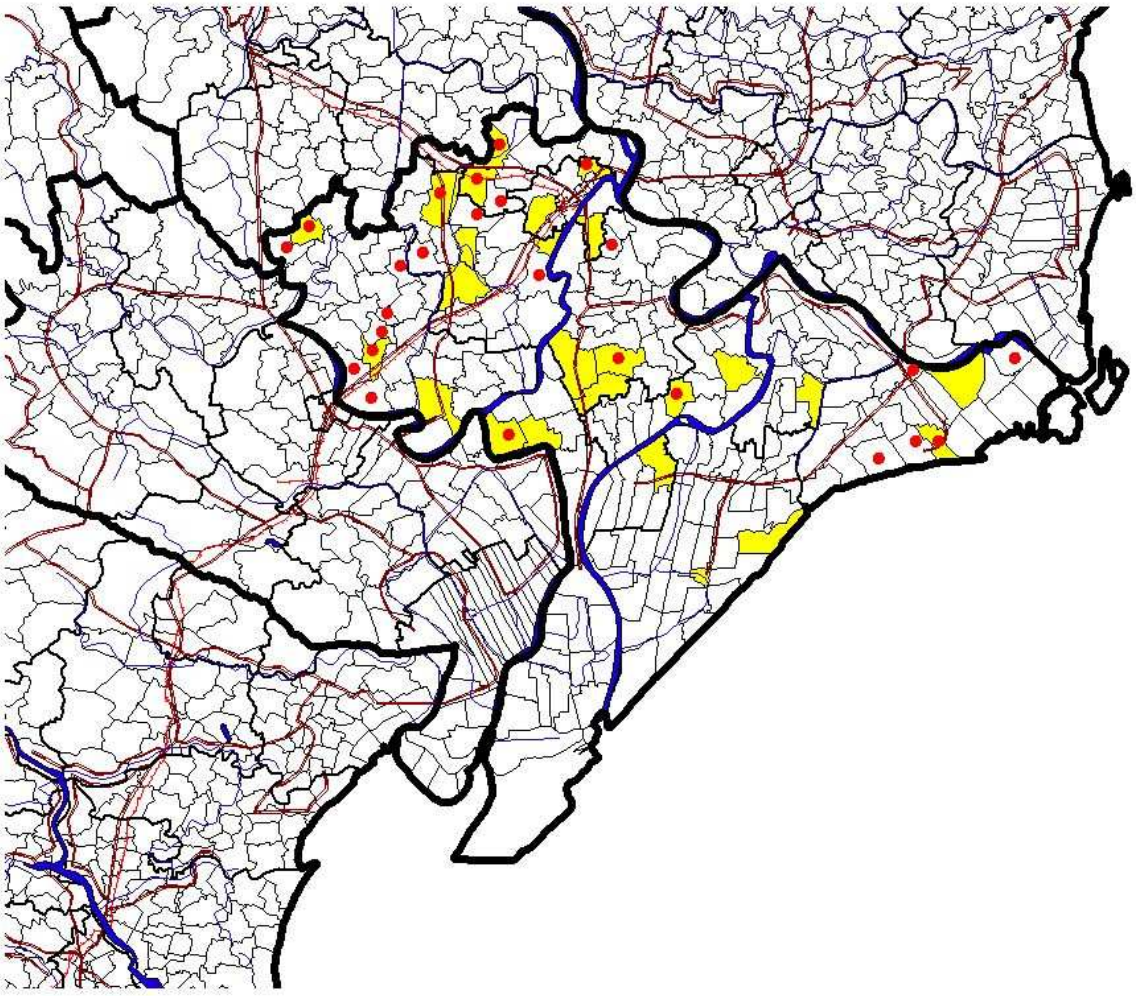
Office:
FAO Representation
3 Nguyen Gia Thieu,
Hanoi, Vietnam

E-mail: ai@fao.org.vn
Tel: 84-4-942-4208 Ext 22/23/29
Fax: 84-4-942-3257
Postal address: FAOR Vietnam, P.O. Box 63, Hanoi, Vietnam

CADS activity in Nam Dinh

Selection of the communes

25 communes out of 225 were selected.



The red dots are communes were outbreaks occurred in 2007

Nota: the presence of high poultry density and high number of big duck or chiken farms were important criteria in the selection of the communes. Since the number of communes selected per district was limited due to human capacity, it was not possible to cover all communes that had outbreak. But it is important to note that this disease searching approach aims at detecting rumors about outbreaks and should be effective beyond the limits of the selected communes

Selection of the villages:

Visit of 2 villages per month in each commune if 2 communes or more were selected.

Each month the villages will be selected at-random or according to rumour of infection. (if no rumour of infection, each month the villages will be different, once, every villages will have been visited, start again with the first villages).

If you hear about rumour in another commune, go to this commune instead of the selected one

Information to collect

For details, refer to training course organised in May 2007

Information on health status of the poultry will be collected thanks to interviews of key informants every month by a team of 2 persons (for instance the the head of paravets and one district vet of the selected communes) and by direct observations.

The key informants will be:

- at least one drug and feeding seller of the selected villages (if no drug seller, do one more family)
- heads of selected villages or paravets of those villages (if no paravet and if head of village absent, do one more family)
- human health workers of the selected villages (if no human health worker, do one more family)
- between 5 to 10 families per village selected

The team will look for evidence of outbreaks consistent with HPAI using the case-definition that includes: unusual mortality, sudden death or clinical signs of either AI, NCD duck plague or pasteurellosis.

Instead of a formal questionnaire, he will have a check list of information to collect when organising interviews (see annex 1). When visiting the families, the team will also have to do direct observation of the poultry (interviewers will have to pay attention to biosecurity as discussed during the training)

All the interviews will be summarised in one form per village per month (see annex 2).

The output of the interviews should be summarised as follow:

- in the village visited, no suspect mortality or disease on poultry were reported in the past month
- in the village visited, suspect mortality or disease on poultry were reported in the past month, but the situation is now normal
- in the village visited, suspect mortality or disease on poultry is currently reported.

In the last case, immediate action will have to be implemented. In other cases, the team will send their monthly reports.

Responsibilities

DSV:

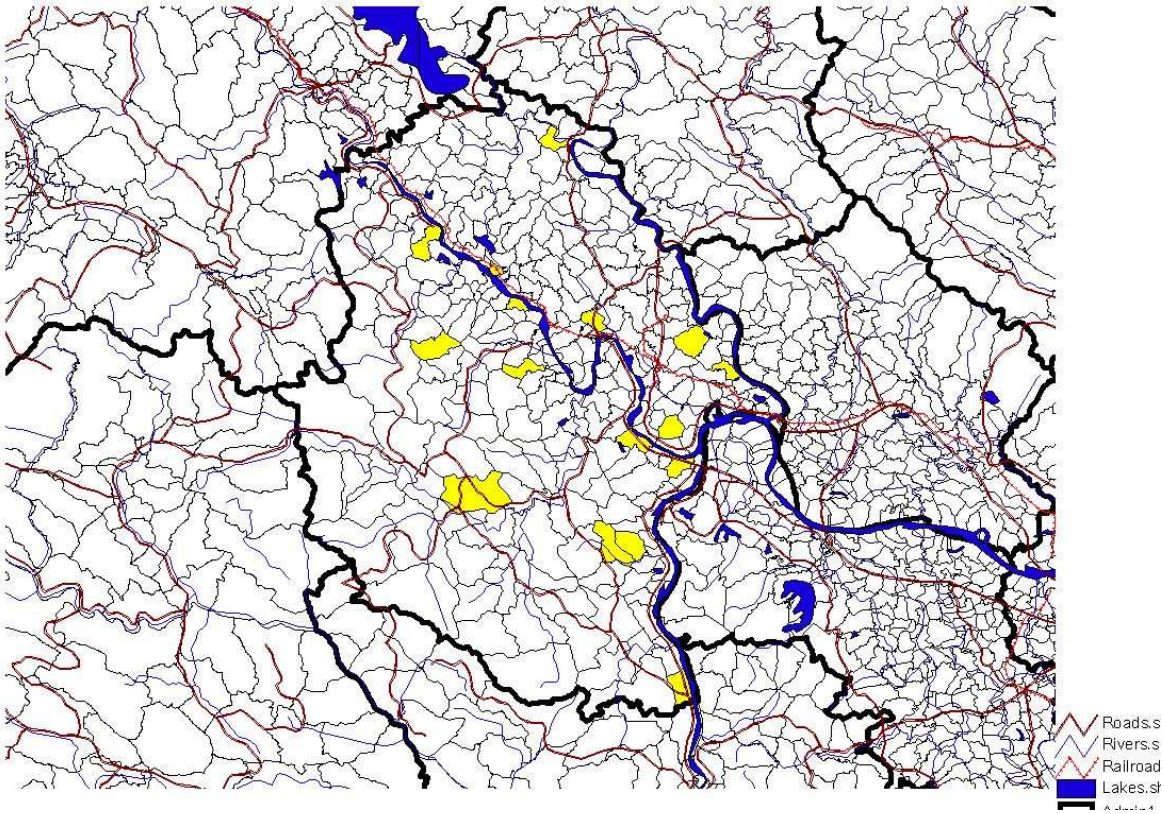
- implementent activity in collaboration with paravet of the selected communes
- send one form per village to SDAH every month
- pay per diem to paravet (80 000 / day)

SDAH focal point

- monitor activity by receiving all the forms and filling excel table every month (to be send to Dr Long)
- pay per diem to DVS (80 000 / day) and request paiement back to DAH based on current LoA. INCLUDE ANNEXE IN VIETNAMESE

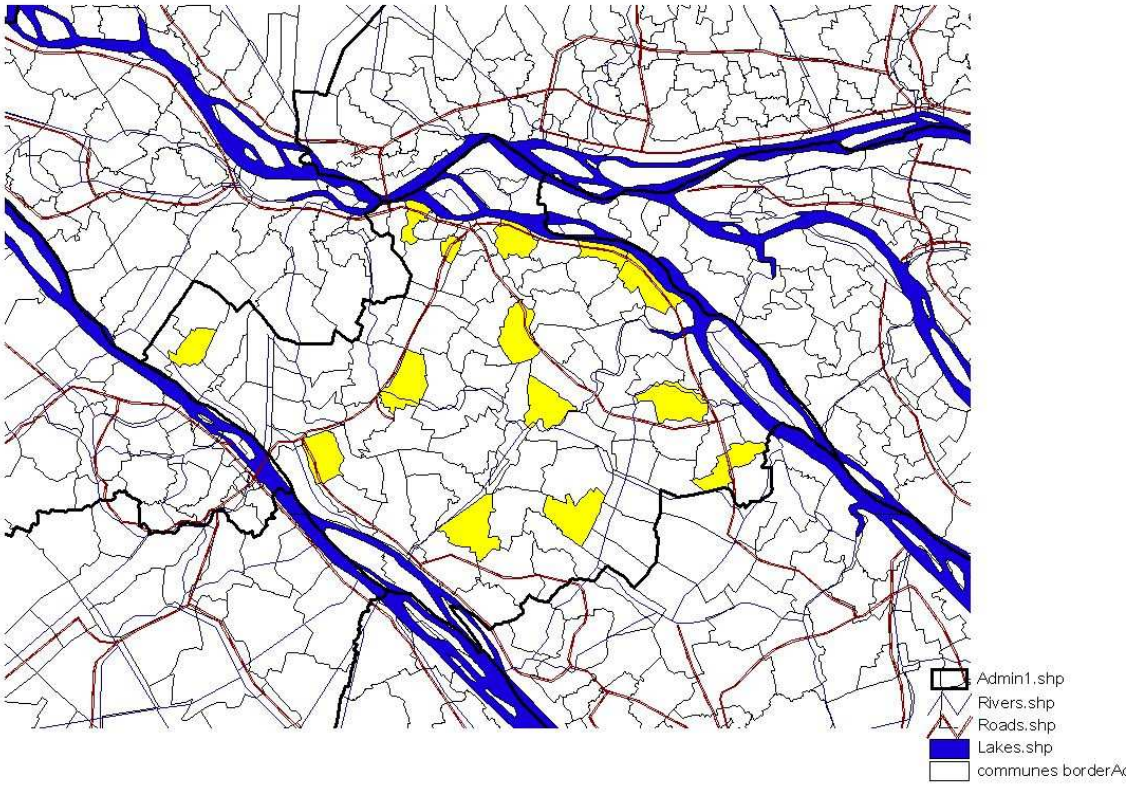
Phu Tho

16 communes out of 268 were selected.



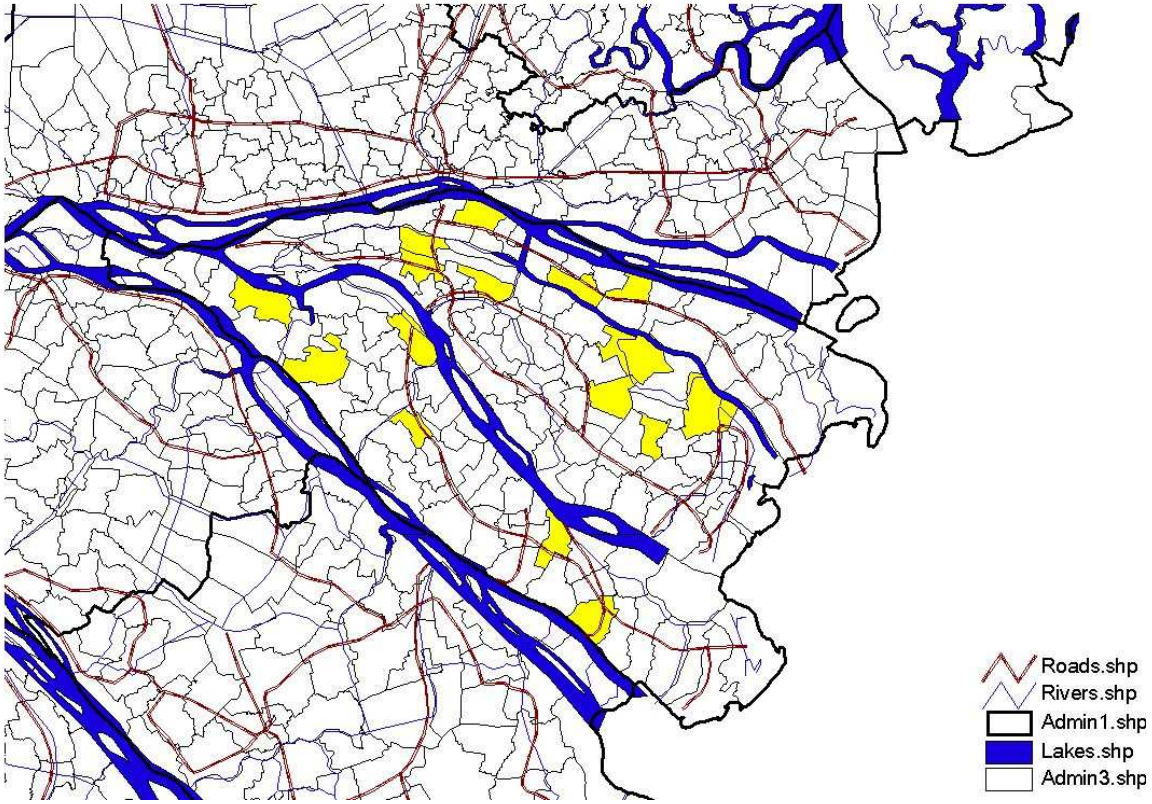
Vinh Long

14 communes out of 107 were selected.



Ben Tre

16 communes out of 151 were selected (see excel table for details)



Annex 8. CADS – Follow-up table for province

Giám sát bệnh chủ động trong cộng đồng

Huyện District	Xã thí điểm Selected commune	Thôn thí điểm Selected village	Số thôn thí điểm Number of selected village	December						
				Hồ sơ phỏng vấn đã có 1/0 Interviews record received 1/0	Thôn không có vấn đề trong 4 tuần vừa qua 1/0 village without problem in the past 4 weeks 1/0	Thôn có vấn đề trong 4 tuần vừa qua 1/0 village with problem in the past 4 weeks 1/0 *	Thôn có vấn đề trong thời gian đi điều tra 1/0 village with problem at the time of the visit 1/0**	Trạm Thú y đã điền mẫu điều tra ổ dịch 1/0 DVS completed outbreak investigation form 1/0	Trạm Thú y đã lấy mẫu 1/0 DVS collected samples 1/0	Báo cáo qua đường dây nóng tháng trước 1/0 Report about pb in the village was received by hotline and other ways last month 1/0
				1	2	3	4	5	6	7
Nam Trực	Đồng Sơn	Đội 7	1	1	1	0	0	0	0	
		Đội 6	1	1	1	0	0	0	0	
	Nam Tiến	Đạo Qũy	1	1	1	0	0	0	0	
		Lạc Chính	1	1	1	0	0	0	0	
	Nam Thái	Thạch Bi	1	1	0	1	0	0	0	
		Phú Thọ	1	1	0	1	0	0	0	
		Xóm 3	1	1	1	0	0	0	0	
	Trực Đạo	Xóm 5	1	1	1	0	0	0	0	
		Thôn 7	1	1	1	0	0	0	0	
	Liêm Hải	Đội 7	1	1	1	0	0	0	0	
		Đội 8	1	1	0	1	0	0	0	
		Phú Kỳ	1	1	1	0	0	0	0	
	Hoàng Nam	Ba Hạ	1	1	1	0	0	0	0	
		Chương Nghĩa	1	1	1	0	0	0	0	
(…….)										
Xuân Trường	Xuân Vinh	Cầu Đá	1	1	1	0	0	0	0	
		Tại Thiệp	1	1	1	0	0	0	0	
	TỔNG SỐ		**46** **A**	**46** **B**	**42** **C**	**4** **D**	**0** **E**	**0** **F**	**0** **G**	**H**

1= yes 0= no

* if 3 = 1, fill 7 ** if 4=1, fill 5 and 7

PI= Performance indicator

PI 1 = B/A*100

PI 2= D+E/H*100

PI 3=F/E*100

PI 1 for programme implementation (objective= at least 80% of the villages visited)

PI 2 for evaluation of the reporting system (objective = at least 70% of the suspect cases detected by active surveillance also reported by passive reporting (via hotline, direct contact to DVS…))

PI 3 for evaluation of DVS activity (objective = 100% of the suspect case reports investigated by the DVS with outbreak form filled)

Annex 9 TOR of the active surveillance training

Background

Different actions have been proposed to stimulate the passive reporting system for acute poultry diseases, thus it is expected that more suspect cases will be detected and notified to the veterinary services. But, in order to increase the confidence in this passive reporting system, the following active surveillance programme is proposed.
The general principle for this programme is to provide support to the head of paravets or district vets to go on the field to actively look for evidence of HPAI outbreaks. A disease-free status certification is also proposed for the semi-commercial sector as a pilot programme.
All those activities will be **targeted to at-risk places** in order to increase the chance of detection the infection.

General objectives

This programme will meet different objectives:

- evaluate the passive reporting system,
- detect HPAI suspect cases in sentinel villages,
- strengthen the surveillance of the vaccinated semi-commercial farms by:
    - testing a disease-free status certification for broiler farms
    - completing the activities of the national post-vaccination surveillance programme

General approach

This targeted active surveillance programme will have two parts:

- a programme targeting the vaccinated semi-commercial farms and based on laboratory testing: **disease-free status certification for broiler farms and post-vaccination monitoring in duck farms (for Nam Dinh province only)**
- a programme targeting the backyard sector (with a lower vaccination coverage) and based on clinical surveillance: **community active disease surveillance**

The programme will be implemented in selected communes and for the community active disease surveillance part, in sentinel villages.

Communes will be selected in each district of the project according to the risk of introduction and dissemination of AI.

General objective of the training:

Introduce and train the targeted staff to the implementation of this surveillance programme

8. Training on the component 1: Disease-free status certification process for vaccinated semi-commercial farms

Organisation

- **Location:**

One training session of 1 day will be organised in Nam Dinh .
This training will be organised following the training on Biosecurity attended by the district staff.

- **Date:**

Nam Dinh: 29/03/07

- **Proposed Agenda**

Time	Topics
8 h 30 – 12 h 00	• Presentation of the protocol (10 min) • Discussion and validation of the protocol (40 min) • Gathering data on poultry farms localisation (40 min) • Coffee break (15 min) • Presentation of questionnaire for biosecurity (60 min) • Discussion on the nomination of the responsible personne from SDAH (15 mn) • Discussion
12 h 00 – 13 h 30	LUNCH TIME
13 h 30 – 17 h 00	• Exercice on questionnaire implementation (60 min) • Preparation of the working programme (40min) • Coffee break (15 min) • Presentation of the management tools (Performance indicators) (15 min) • Presentation of the Participatory disease surveillance component (20 min) • Selection of the at-risk commune (40 min) • Discussion

- **Trainers: FAO field teams**

/Stephanie/Peter for the North
Ha/David for the South

- **Participants:**

One or deux staff from SDAH (in priority, staff from epidemiology division). Those people will then be responsible for the implementation of the program in their province.
Suggestion:
Nam Dinh: Dr Hieu (under FAO constract) and Dr Quanh

Objectives of the training

- Present and validate the component 1of the active surveillance programme
- Introduce the questionnaire for biosecurity improvement
- Introduce tools for monitoring
- Discussed working programme

9. Training on the component 2: Community Active Disease Surveillance, CADS

Organisation

- **Location:**

One training will be organised in each province. This training will be done in combinaison with the training on basic epidemiology principles in the North.

- **Trainers:**

Stephanie/David/Aurelie/Long/Ha

- **Dates:**

In Phu Tho: mai
In Nam Dinh: mai
In Ben Tre: 14 June
In Vinh Long: 12 and 13TH June

- **Proposed Agenda**

Day 1:

- Epidemiology course by A.Brioudes (in particular, review of the basic principles applied to the use of the outbreak and feedback forms)
- Introduction to participatory epidemiolgy and methods for semi-structured interviews (60 min) SD
- Presentation of the protocol for Community Animal Disease Surveillance (20 min) SD

Day 2

Time	Topics
8 h 30 – 12 h 00	• Presentation of the check list (40 min) • Discussion and validation of the protocol (60 min) • Coffee break (15 min) • Selection of the sentinel villages (60 min) • Discussion
12 h 00 – 13 h 30	LUNCH TIME
13 h 30 – 17 h 00	• Introduction to the forms to be used (20min) • Practice (1 hour) • Coffee break • Discussion • Presentation of the monitoring tools for SDAH staff only

- **Participants:**

Two participants per district from those who participated to the TOT training organised by Danida. The participants with best ability for communication will be selected for the programme implementation.

- **Training material:**

LCD
A0/colour pens
Notebooks and pens for participants
Documents photocopy

Objectives of the training

- Present the protocol for CADS
- Introduce the principles of participatory disease surveillance
- Practice the use of checklists

Annex 10 report of Active surveillance training in North

Feedback from Trainings on Basic Epidemiology and Active surveillance

Trainers: A. Brioudes, S. Desvaux, Pham Thanh Long

Phu Tho **10-11 mai 2007**	**Nam Dinh** **15-16 mai 2007**
4 staff from Epi unit SDAH Head Phu Tho DVS Head paravet Phu Tho town Head Phu Ninh DVS Head paravet Phu Ninh Head Tam Nong DVS Head paravet Tam Nong Head Thanh Thuy DVS Head paravet Thanh Thuy Head paravet Lam Thao Head Cam Khe DVS Staff Yen lap DVS Head paravet Tan Son Head DVS Tan Son Head paravet Doan Hung Staff Doan Hung DVS Head paravet Ha hoa DVS staff Ha hoa Head paravet Viet Tri Dvs staff Viet Tri Head paravet Thanh son Head dvs Thanh Son Head paravet thanh Ba Lam Thao DVS (Dr. Dung came in the afternoon) Head of DVS Viet Tri (Ms Be). Paravet of Yen Lap Thanh Ba DVS staff (Mr. Tuong) Total 30 participants ***(Some people came late)***	2 staff from Epi unit SDAH 1 staff from animal quarantine SDAH Head Truc Ninh DVS Staff Hai Hau DVS Head Xuan Truong DVS Staff Xuan Truong DVS Head Hai Hau DVS Head paravet Nghia Hung Head Nghia Hung DVS Staff Vu Ban DVS Head paravet Vu Ban Head Giao Thuy DVS Head paravet Giao Thuy Head Y Yen DVS Head Vu Ban DVS Staff Truc Ninh DVS Head Nam truc DVS Head paravet Nam Truc Head My Loc DVS Head paravet My Loc Head Nam Dinh DVS Paravet of Nam Dinh city Paravet of Y Yen 1 SDAH (Dr. Hieu-Vice Director)
30 participants among which 14 assisted to Danida training on TOT	25 participants among which 14 attended Danida training on TOT

General discussion

Impact of awareness campaign
Phu Tho: need to improve awareness campaign because farmers do not care about AI: they eat non well cooked eggs, they do not report if only 5-7 animals die, but only when all animals died.

Nam Dinh: support only for paravets, drug and feed sellers. May be need to do training for "big" farmers. (size varying according to districts).

⇨ *Project manager needs to decide if additional training for farmers have to be planned.*

Farmers do not want to submit the samples.
⇨ *need to discuss with laboratory to see the possibility of sending swabs*

Other comments from participants
55 000 vnd/100 km is not enough for paravet and district vet to collect samples
Nam Dinh SDAH position:

- when SDAH received calls by hotline and reported to DVS, the DVS went to investigate
- DVS has the responsibility to investigate and to collect samples in case of AI suspicion. They receive salary for that.

Discussion on the suspicions received by hotline

Phu Tho

1. Thanh Son district

1 suspicion
Farmer informed directly DVS (then DVS asked farmer to call hotline) at 7.30 am on 20/04
Hotline was busy: difficult to reach; (call reported in the file at SDAH)
DVS went at 8.am to the farm
Information given by farmer on phone: mortality on dead duck flock (66 ducks, 44 dead in 3 days)
Collect dead birds on Sunday (22/04) to brought to SDAH but has to wait (took 3 live birds, one died when arrived at SDAH). Did not have swab.
Why choosing live birds? They said it is better to send to the lab (because the dead birds smell….) (Rque: DVS took time to bring to SDAH)
Discrepancy between dates and what district says. They say they took only 1 day between suspicion and collection of sample.

What was done with the 22 dead ducks?
DVS adviced to use antibiotic, and advice authorities to disinfect the farm + restrict movements; he assigned paravet to monitor the farm every day. The neighouring farmers sold their animals because they were afraid but authorities blamed them.
DVS said that farmers buried dead birds before he arrived.
When did they receive lab results? 1 week after by SDAH then DVS informed commune by phone. The farmer was informed the day after. (3 diseases tested, all negative)

DVS staff has already received the travel fee from SubDAH.

2. Thanh Ba district

2 suspicions in April. The 2 farmers called directly the hotline together.
Received suspicions by hotline 20/4 (cases reported in the file at SDAH)
Information given by the farmer on phone : 97 chickens, some dead within 7 days.
During investigation, he found out that 47 chickens died.
Second farm has 30 animals and 12 dead.
Nervous symptoms.
Has collected samples: 3 birds / farm with 1 dead, 1 sick and 1 live he killed before transport.

Send samples to SDAH by bus within the day.
SDAH send by bus to Hanoi.
Results from lab within 5 days. Results= ND positive.
Commune was informed.
DVS staff did not receive yet the travel fee.After questioning SDAH, we understood it was because lab samples were sent by bus.
⇨*We confirm again to SDAH that the fee must be given to cover travel from DVS to the farm and indirectly also for the work done and samples taken. SubDAH agreed to pay the DVS much faster now.*

Nam Dinh
14/05: One suspicion in Vu Ban: farmer called directly hotline. DVS investigate and conclude it was not an AI suspicion (white diarrhea)

24/02: One suspicion in Nam Dinh city. Farmer called about chicken death (4 dead out of 20). Questions to farmers: the participant cannot answer because he was not the one to visit the farm. But he expained that the vaccination for the 4 diseases was well implemented in that district, so he excluded the possibility of an AI suspicion…

⇨ *It seems that some DVS staff still do not use standardised criteria to confirm or rull out an AI suspicion.*

Comment from SDAH: most of the calls were from small farmers without good knowledge, so they called hotline to have assistance. When visiting the farms, the DVS mainly observed white and blue diarrhea and excluded an AI suspicion.

No travel fee received by DVS because non sample taken and no report sent.

Use of outbreak form

Phu Tho:
Decision tree:
People need to have a color version to keep at DVS for better understanding of the decision tree
Form needs to be reviewed in Vietnamese to improve presentation
Trace back and trace forward: ok.

Nam Dinh
Exercice on decision tree based on Vu Ban exemple
We had to clarify the definition of sudden death.
In the 4th question, the distinction about vaccination for ND and absence of vaccination for AI is still confusing.
We discussed about the first question: in case of mycoplasma for instance, we can have symptoms similar to ND and then conclude to a very high suspicion.

⇨*Need work again on the criteria.*

Which animals to collect in case of suspicion?
Some participants suggested to collect sick birds, some other healthy ones. They finaly came to the conclusion that dead and sick birds were better.

Hotline call reported in the file:

Phu Tho:
4 calls reported, 2 were followed by sample collection.

Nam Dinh
7 call reported at SDAH between 01/02/07 to 14/05. In none of those cases, samples were collected. Reason for that: the DVS excluded AI suspicions in every case.
➪ *SDAH and FAO trainers insisted again on the need to send more carcasses to the lab.*

Use of feedback form and review of measures of disease frequency

During the presentation, trainers explained the importance of:

- having % and raw data
- to always refer to the population at risk at the district level (need to have this informaion available: ok according to the participants)
- to use both the animal and the farm units
- differenciating the prevalence from the monthly incidence

➪ *it was explained again that this feedback from was provided to them to improve their capacity in data analysis and to improve their relationship with the commune levels by providing them with feedbacks. The project will not provide additional support for that.*

Presentation of CADS component

Phu Tho
Agree on the protocol and key informants.

Discussion on what to do if samples were collected
It was explained that when collecting samples, the interviewers needed to explain to the farmer they can request for a compensation in case he has avian influenza and the birds needed to be culled. The participants thought it was not necessary since the farmers were already informed.

Discussion on biosecurity when visiting families: participants agreed to say it was not a problem since they could use shoes from house when entering into the compound.

Number of communes and villages to be visited each month
Participants discussed on the number of villages per district (some suggested to have 4): finally 3 in general and 2 in montanous areas (eg Tan Son)

Time for interviews according to participants:

- Drug sellers: 15 mn
- Family 30-45 mn because need to drink tea

Discussion about DSA for DVS and paravet:
Participants had different opinions et the beginning but then they agree to request 100 000 VND /day. The trainers explained we should find a compromise in order to use a fee that could be supported by the province in the futur.

Discussion on the need or not to pay farmers? The group agreed to say no since the vet can also answer to some of their questions

Nam Dinh
Comments during PPT presentation:

- Some villages do not have any vet or feed shop : so, no need to visit them.
- Traders were proposed as key informant, but aggrement on the fact they could be relectant to give information on rumor of poultry mortality.
- Some poultry farmers could hide information : so, it is necessary to crosscheck information from different sources.

Time needed for interwiews is estimated by participants to be around 30 minutes.

Using special shoes or desinfecting shoes before or after entering into a compound doesn't not appear as an obvious necessity for participants. After discussion they agreed to say they could implement biosecurity measures easily.

Discussion on what to do if samples were collected
Trainer insisted on the need to inform farmers about compensation policy in addition to classical biosecurity measures.
Participants are aware of compensation policy. But if authorities decide not to officially declare a positive result, farmers will not receive compensation by national authoriries, even if he reported problems on his poultry. This is usually the case when there is only 1 farm infected. Local authorities will officially declare only if there are several outbreaks.
It appears to be "impossible" for DVS staff to suggest to local authorithies to apply compensation measures with their local budget.

⇨ *the project need to decide on the way to deal with this constraint.*

Number of communes and villages to be visited each month
2-4 villages/month maximum could be investigated because DVS staff have lot's of work.
May be 2 communes /month thus 4 villages (2/commune).
Maximum 10 interviews / day (= from 5 to 7 famillies (5 is a minimum))

Problem raised by participants: need to ask autorisation for interviews to local authorities or need to be accompagnied by Head of village. In this case, they think it will be easier to have information because they know better the situation on the field and farmers know them.
Concern of FAO consultant: 3 interwiers is too much and farmers may not feel so confident when receiving such a "delegation". FAO consultant also concerned about the presence of local authority (head of village) during the interviews but according to the participants, this will facilitate the interview…Finaly, the participants agreed to say that presence of Head of village is necessary even if paravet may not come.

Discussion about DSA for DVS and paravet:
Initial request from participant: 100 000 VND for DVS and 50 000 for Head of Paravet.
Facilitators recognised that DVS will have to travel whereas paravet may be in the commune already, but the difference cannot be so high.
Last proposal for compromise: 80 000 VND for DVS staff and 70 000 VND for HP.
It was highlighted that fee from gouvernment for official staff is 40 000 VND (new regulation mentions 70 000 vnd) when traveling outside of the province.

Discussion on the need to pay farmers?
If long time taken for interviews, money is usually given to people.But, in this case, interviews will last 30 min maximum so it doesn't appear to be justified.

Constraint reported by participants: they need to inform the farmer the day before and to ask him to stay at home. Answer: no planification needed for this kind of PE. They can interview the wife of the farmer if she is at home and if there is nobody, they go to the neighbouring house.
They finally agree with no special fee for persons interviewed.

Role play to train participants on semi-structured interviews

Exercice 1:

Comments by one of the trainees:
- Should leave shoes outside
- No question/action by paravet
- Ask direct question on poultry diseases
- Forget to say why they come to this farm (because they heard about problem here)
- Did not have a look on the flock

Comments from FAO consultant:
- Very clear, short and direct questions: no ambiguity for farmer understanding and answer.
- If no problem of translation, the first question was quiet general and not detailed and targeted on AI at the biginning.
- Good to ask several times but in different way to crosscheck and to be sure to understand correctly.
- But it is not really necessary to justify why they visit this farm in particular.

Exercice 2:

Only 5 minutes: they will have time for lot's of interview within a day!!

Comments from FAO consultant:
Introduction OK
First question was: did you sell lots of ATBQ last month?
Farmer can wonder about more taxes for gouvernment if good buisness for him…
Question should be: Did you ear about any animal diseases? Did you see lot's of farmers last month and why?
Too long questions with several questions asked at once and interviewer did not take really time to listen for answers.
When the drugs seller mentioned about clinical signs, they should have asked some more details on it afterwards.
Should have asked about the location of the rumors in order to adapt the following famillies visits.

Conclusion:

DVS will receive working plan with:
- the fees finally proposed after discussion with DAH and FAO,
- confirmation of communes to be visited

Feedback expected from them on how they deal with this CADS on the field.

Presentation to FAO focal point at SDAH of the Excel files for monitoring and evaluation.

Annex 11. Report of active surveillance training in the South

(Courtesy to David Hadrill, field project manager)

Evaluation of Community Active Disease Surveillance (CADS) Training

Provinces: Vinh Long and Ben Tre
Trainees: Sub-DAH, DVS and Paraprofessional ("Paravet") Staff
Date: 12-13 and 14-15 June, 2007

Introduction

This evaluation concerns training completed in the South Viet Nam component of FAO project OSRO/RAS/602/JPN. In each Province the training was a two-day course that included an introduction to participatory epidemiology and how to implement the new Community Active Disease Surveillance (CADS) programme.

The trainers were David Hadrill (Field Project Manager) and Stéphanie Desvaux (Epidemiology Consultant) with translation by Truc Ha (Field Project Assistant).

Course objectives

At the end of the training, the trainees will:

1. Understand, use and help further improve the outbreak investigation and reporting system and forms.
2. Be able to provide feedback on disease reports from the District to the Communes with some analysis of raw data, in particular,
    a. Relating raw data to population at risk and expressing as a percentage,
    b. Use three important reference units, that is, animals, farms and communes,
    c. Report the number of new outbreaks in a given time period, eg month, to indicate the incidence as well as prevalence.
3. Know basic principles of participatory epidemiology, including
    a. Flexibility of approach,
    b. Triangulation, and
    c. Behaviour.
4. Be able to perform semi-structured interview technique, using a checklist.
5. Be able to carry out the project component of CADS in their work area.

Course contents

The course included the topics listed below.

Day 1:

- Discussion on surveillance activities implemented so far (reporting system, awareness campaign).
- Review the use of the outbreak investigation form
- Feedback of epidemiological information, basic data analysis and feedback forms.
- Introduction to participatory epidemiology and methods for semi-structured interviews.

Day 2

- Presentation of the protocol for Community Animal Disease Surveillance
- Presentation of the check list
- Discussion and validation of the protocol
- Selection of the sentinel villages
- Introduction to the reporting forms to be used
- Presentation of the monitoring tools for SDAH staff only, particularly the project's national consultant Focal Point.

Trainees and gender balance

There were 25 trainees in Vinh Long Province and 28 in Ben Tre. The trainees in each Province were from the SDAH, the DVS offices and also paravets from pre-selected communes.

The communes had been selected before the training for presence of criteria that might make HPAI prevalence more likely, for example, live bird markets, many poultry farms, main roads, poor vaccination coverage and access to wild birds. For a few Districts in Ben Tre, the information had not been provided during the training and so the selection was completed by obtaining this information from trainees during the course.

In Vinh Long the gender split was 19 men and six women. In Ben Tre it was 24 men and four women. Details of the trainees are shown in the tables below.

Table. Vinh Long Province Trainees

No.	Name	Position	M/F
	SDAH		
1	Huỳnh Long Nhân	Dep Head, Epidemiology	M
2	Lê Thái Nguyên	Veterinary Sanitary Controller	M
3	Nguyễn Ngọc Thành Minh	Veterinary Sanitary Inspector	M
4	Hồ Thị Cẩm	Epidemiologist	F
	Districts		
5	Nguyễn Hữu Thế	DVS BM	M
6	Nguyễn Công Minh	DVS LH	M
7	Nguyễn Thái Hà	DVS MT	F
8	Nguyễn Thành Thanh Bình	DVS TB	M

9	Võ Quốc Hùng	DVS TO	M
10	Lê Thụy Mai Loan	DVS TXVL	F
11	Trần Văn Tám	DVS VL	M
12	Lê Văn Năm	Head Paravet Tra On	M
13	Hồ Văn Kim Long	Head Paravet Vinh Long town	M
14	Lê Văn Chìm	Head Paravet Commune An Phước	M
15	Lê Văn Minh	Head Paravet Commune Đông Bình	M
16	Lê Sơn	Head Paravet Commune Hòa Hiệp	M
17	Trần Thanh Sơn	Head Paravet Commune Thanh Đức	M
18	Nguyễn Văn Tòng	Head Paravet Commune Trung Ngãi	M
19	Nguyễn Chí Tâm	Head Paravet Commune Tân Mỹ	M
20	Nguyễn Văn Dũng	Head Paravet Commune Tân Ngãi	M
21	Trương Ngọc Điệp	Head, DVS BM	F
22	Lê Thị Trung Dung	Head, DVS LH	F
23	Đặng Thanh Tước	Head, DVS MT	M
24	Trần Thị Huệ	Head, DVS TB	F
25	Nguyễn Hoàng Lâm	Head, DVS VL	M

Gender ratio of trainees, M/F = 19/6

Table. Ben Tre Province Trainees

No.	Name	Position	Location	M/F
1	Phan Trung Nghĩa	Head, Technical Unit	SDAH	M
2	Phạm Kim Thành	Dep Head, Technical Unit	SDAH	M
3	Lê Ngọc Thuận	Tech Unit Staff member	SDAH	F
4	Lê Thị Thảo	Tech Unit Staff member	SDAH	F
5	Trần Ngọc Loan	DVS Head	Tổ Thú y Thị xã	M
6	Huỳnh Thị Ngà	DVS Staff	Phòng Kinh Tế Thị xã	F
7	Lê Ngọc Thi	Head Paravet	BTY Phú Hưng	M
8	Đỗ Hoàng Minh	DVS Head	Trạm TY Mỏ Cày	M
9	Trần Văn Gia	DVS Staff	Trạm TY Mỏ Cày	M
10	Nguyễn Minh Điền	Head Paravet Phước Mỹ Trung	BTY Phước Mỹ Trung	M
11	Nguyễn Thị Châu	DVS Head	Trạm TY Thạnh Phú	F
12	Đặng Thành Tựu	DVS Staff	Trạm TY Thạnh Phú	M
13	Nguyễn Minh Hải	Head Paravet Tân Phong	BTY Tân Phong	M
14	Võ Hữu Phước	DVS Head	Trạm TY Chợ Lách	M
15	Võ Phước Hoà	DVS Staff	Trạm TY Chợ Lách	M
16	Mai Văn Hiếu	Head Paravet Long Thới	BTY Long Thới	M
17	Nguyễn Chí Quốc Anh	DVS Staff	Trạm TY Châu Thành	M
18	Hồ Văn Nhanh	DVS Staff	Trạm TY Châu Thành	M
19	Trương Văn Sáng	Head Paravet Qươí Sơn	BTY Qươí Sơn	M
20	Hà Văn Bánh	DVS Head	Trạm TY Bình Đại	M
21	Nguyễn Hữu Phương	DVS Staff	Trạm TY Bình Đại	M
22	Tăng Văn Hiệp	Head Paravet Vang Qươí Đông	BTY Vang Qươí Đông	M

23	Nguyễn Văn Hùng	DVS Head	Trạm TY Ba Tri	M
24	Phan Văn Châu	DVS Staff	Trạm TY Ba Tri	M
25	Nguyễn Văn Phiên	Head Paravet Mỹ Thạnh	BTY Mỹ Thạnh	M
26	Nguyễn Văn Trọn	DVS Staff	Trạm TY Giồng Trôm	M
27	Nguyễn Văn Phương	DVS Staff	Trạm TY Giồng Trôm	M
28	Nguyễn Văn Ba	Head Paravet Bình Thành	BTY Bình Thành	M

Gender ratio of trainees, M/F = 24/4

Modalities of field visits

Communes selected for CADS implementation

During the training, trainees had the opportunity to discuss and change the selection of communes in their districts.

Panned interviews for one day visit to a village

The key informants for interviews were discussed with trainees and agreed. The list includes:

- Head of Village,
- Village paravet (if present),
- Village health worker (if present),
- Village veterinary drug store owner (if present),
- Farmers/families, fiver per village.

Number of villages per month

It was discussed and agreed that the number of villages covered in each district in one month would be:

Vinh Long	seven villages
Ben Tre	six villages

In each district there will be two teams of two persons carrying out this work.

Per diem

The SDAH Heads discussed and agreed the following rates (which are within the guideline limits provided by DAH),

Vinh Long	VND 50 000 per person per day
Ben Tre	VND 65 000 per person per day.

Training evaluation comments

Owing to misunderstandings between trainer and translator, a full evaluation was not done for this training. Nevertheless, in Vinh Long the trainees discussed issues related to the training and came up with the following points:

1. The organization and training room and coffee breaks were good.
2. Two days for the training was enough.
3. The trainees understand how to calculate prevalence and fill the feedback form.
4. More training on this subject should be given to <u>all</u> paravets.

Annex 12 HPAI Outbreak investigation guideline

Developed in collaboration with field project manager and FAO project team

1. Guide on risk to workers and appropriate protective clothing to wear

	Low Risk for people	Medium Risk for people	High Risk for people
Type of farm visit planned	No contact with birds	During your visit, you may touch birds or bird products eg eggs, or equipment that is in direct contact with birds.	HPAI confirmed case. High HPAI suspicious case [see HPAI Suspect Case Confirmation, below]
HPAI suspicion level [as in table 3]	Low	Moderate	High
Protective clothing	You can visit the farm in normal clothes. Always wear washable rubber boots and wash your hands and boots at end of visit.	Always use washable boots, work-wear, gloves and mask. Wear full PPE when further indications on the farm make HPAI seem more likely.	Wear full PPE.

2. Guide on HPAI Suspicious Case Confirmation

Question 1: Do you have any of the following signs?

a) Sudden death is reported in some birds (for more than one day)? Yes □ No □
b) Unusual number of dead poultry in a flock (for more than one day)? Yes □ No □
c) Acute respiratory signs with rapid mortality in chickens, or nervous signs and rapid mortality in ducks reported in some birds (for more than one day)? Yes □ No □
d) In a commercial flock vaccinated against HPAI: moderate mortality + drop in feed intake +/or drop in egg production? Yes □ No □

No ⇨ The suspicion is not confirmed. The HPAI suspicion level is low. Action: *Make routine, monthly report to SDAH. Plan a follow-up visit.*
Yes ⇨ The suspicion is confirmed and the level may be medium or high. Action: *Complete the Outbreak Investigation form. Consider questions 2,3,4.*

Question 2: Is there an HPAI infected place in the surrounding areas (within 10 km)? Yes □ No □

Question 3: Other family in the village with the same problem? *(according to report and direct observations)* Yes □ No □

Question 4: ***Do you have one of the following criteria?*** Yes □ No □

- poultry of different age categories are affected □
- poultry of different species are affected □
- the sick or dead poultry were vaccinated against ND or duck plague □
- the sick or dead poultry WERE NOT vaccinated against Avian Influenza □

The more "YES" answers you get to these questions, the higher is the AI suspicion.

3. Guide on Action and Advice to Farmers

	Low HPAI suspicion	Moderate HPAI suspicion	High HPAI suspicion
DVS Actions	Include in monthly report to SDAH.	Outbreak Investigation form.	Outbreak Investigation form.
	Plan a follow-up visit	Consider post-mortem of birds and sending samples for lab test.	Post-mortem birds and send samples for lab test.
		Report to SDAH.	Report to SDAH.
		Advise local People's Committee / Avian Influenza Steering Committee	Advise local People's Committee / Avian Influenza Steering Committee
		Recommend PC wait for lab test result before culling.	Advise the PC to cull birds and dispose of them safely as soon as possible.
		Consider movement controls in and around suspect farms.	Provide protective equipment to the farmer, especially mask.
			Ensure PC puts movement restrictions in place on all access roads to the premises.
			Ensure that before and during the culling process, only persons in full PPE have access to the premises.
			Disinfect the premises, first using soap (detergent) solution on all surfaces and following up with disinfectant solution.
Advice to farmers	Inform farmer a follow-up visit may be made.	Advise farmer, paravet, farm workers and any other visitors to the farm to avoid contact with other birds and avoid visits to other farms.	Advise farmer, paravet, farm workers and any other visitors to the farm to avoid contact with other birds and avoid visits to other farms.

		Ensure all persons leaving farm disinfect footwear and vehicle wheels.	Ensure all persons leaving farm disinfect footwear and vehicle wheels.
		Advise farmer and family to take care to wash hands with soap after touching birds, poultry products and equipment	Advise farmer and family to wear gloves and mask when touching birds, poultry products and equipment.
		Advise family to ensure poultry products are well cooked.	Advise family not to eat poultry products from the farm.

Annex 13 Outbreak investigation form

Developed in collaboration with field project manager and FAO project team

PROVINCE OF ……

AVIAN INFLUENZA SUSPICION INVESTIGATION REPORT FORM

Date of visit:

Reporting officer: ☐ from CCTY ☐ from district

1. Suspected Place Investigation Details

Farmer's name (+ tel. no.):
District: Commune:
Viillage:
GPS X coordinate: *GPS Y coordinate:* *(if GPS available)*

Date of first observed signs of disease:
Date last case seen in the farm or village:

Farming system. Mark X whichever applies **(to be harmonised with TADinfo)**

Commercial small (100 to 2 000 birds)	□	Backyard or village household	□
Commercial medium (2 000 to 5 000 birds)	□	Grandparent or parent flock	□
Commercial large (over 5 000 birds)	□	Other kind of farm _ _ _ _ _ _ _ _ _ _ _	□

2. Affected and non-affected species

Species code	Sex code (M or F)	Age	Number sick	Number of deaths	Total birds in the farm or village (animals at risk)	Number examined

[Code to be adapted to Vietnamese language)

BC broiler chicken	BD broiler duck	G goose	Ph pheasant
LH laying hen	LD laying duck	Q quail	P pigeon
LC local chicken	MD Muscovy duck	T turkey	WB wild bird
FC fighting cock	O other species (specify type)	GF guinea fowl	Z zoo animals

Signs of sickness

Were any of these **clinical signs** seen in the sick birds? Mark X by any seen. *(to be harmonised with Tadinfo)*

Sudden death of many birds	☐	Many deaths over three days	☐	Respiratory signs	☐
Reluctance to move / prostration	☐	Oedema of comb and/or wattles	☐	Sneezing and sinusitis	☐
Diarrhoea	☐	Congestion/cyanosis of comb, wattles or shanks/hocks	☐		

Add any extra comments about signs of sickness seen in this farm or village

Post-mortem findings

Were any of these lesions seen at **post-mortem**? Mark X by any seen (to be harmonised with Tadinfo)

Dehydration ☐	Enlarged spleen ☐	Few lesions ☐
Oedema of comb or wattles ☐	Petechiae in trachea ☐	Petechiae on sternum ☐
Subcutaneous oedema ☐	Yellow or grey necrotic foci in organs ☐	

Comments or any other lesions found:

3. Trace-back and forward (source of infection and spread of infection)

Discuss with the farmer:

- **Possible sources of infection (trace back),** that is, all movements of animals, people and materials INTO the farm **two weeks before first clinical signs observed.**
- **Potential spread of infection (trace forward),** that is, all movements of animals, people and materials OUT of the farm **two weeks before clinical signs and until control measures were applied.**

Do the farmer's responses indicate any of the following possible sources of infection?

						Location of the source
Illegal animal movements	Yes		No		Not known	
Legal animal movements	Yes		No		Not known	
Movement of animal products	Yes		No		Not known	
Wildlife contact	Yes		No		Not known	
Fomites (vehicle of poultry traders, possibly contaminated material…)	Yes		No		Not known	
People (visitors, farmers…)	Yes		No		Not known	

Write down any additional comments about the possible source of the outbreak.

Location of possible places contaminated by the farm

What were the movements of people, material or animals off the farm from two weeks before clinical signs until control measures were applied?.

Did you identify any possible sources of infection? Did you identify any other farms that could have been infected from this farm?

Yes: you need to visit those places and observe animals.

No: the source of infection is still unclear, you must suggest to People committee to increase surveillance in the area

4. Laboratory samples (if taken)

Date sent to the laboratory:
Number and type of birds sampled:
Type of samples:
Note: You must also fill a **Sample submission form** with details of samples sent.
Test result: □ *Negative H5N1* □ *Positive H5N1* □ *Uncertain test result*

Signature of the reporting officer	Signature of the paravet or vet	Signature of the farmer
Date	Date	Date

Forward and Backward Tracing: to be completed by SDAH Technical Team in case of positive laboratory results for HPAI

Province:

1. Location of infected place

Farmer's name (+ tel. no.):
District: Commune:
Viillage:
GPS X coordinate: *GPS Y coordinate:*

2. Farm biosecurity

What was the **source or sources of drinking** water for the sick birds?
Municipal supply □ Pond □ Rain collected □ River or canal □ Well or bore □

Type of farming : Insert code . . . . . .
Code: open air (A), semi open air (SA), confined ground building (G), confined battery building (B)

Farm location

By a major road? Yes □ No □ By a pond? Yes □ No □
By a river? Yes □ No □ By a canal? Yes □ No □
By a stream? Yes □ No □ By a lake? Yes □ No □

If located close to a **water source** (canal, pond, stream, lake or river),
Do the poultry from the infected farm have access to it? Yes □ No □
Do other domestic animals from the farm have access to it ? Yes □ No □
Do wild animals have access to it? Yes □ No □
If any yes answers, give details . . . . . .

Do poultry on the farm have easy contact with **wild birds** ? Yes □ No □
Can **other domestic animals freely move** in and out of the farm, eg dogs?
Yes □ No □ If yes, give details . . . . . .

3. Vaccination on the farm in the past 12 months

Was HPAI vaccine used on this farm in the past **six** months? Yes □ No □

Give details of all vaccines used on this farm or village in the past **12** months (against HPAI, Newcastle disease, gumboro, duck plague …).

Name of vaccine	Name of vaccine manufacturer	Date of vaccination	Code for vaccine administration

Codes for vaccine administration
Drinking water = 1 Intra-ocular = 3 Injection = 2 Spray = 4

4. Detailed investigation of poultry movements two weeks before onset of disease until control measures were applied

Sources of the birds on the farm or in the village

Please give details of sources of the birds on this farm or village, the type of bird or bird products bought in and the province/ district/commune where they came from.

Source of birds: village or farm name, trader or other	Type of birds (code)	Province/District/Commune where birds came from

Codes for types of birds or bird products that were bought or procured

Carcass or offal = 1	Day old chicks = 2	Day old ducks = 3	Local adult = 4
Hatching eggs = 6	Point-of-lay birds = 7	Slaughtered birds = 8	Eggs= 9

Details of trading patterns in this village or on this farm

Please give details about the trading activities in this village or on this farm, the type of products sold and who and where they were sold to.

Type of product sold (code)	Where products were sold to (code)	Where products were sold to (Province/District/Commune)

Code for types of products that were sold

Carcass or offal = 1	Off-lay birds = 5
Day old chicks/ducks = 2	Point-of-lay birds = 6
Hatching eggs = 3	Slaughtered birds = 7
Home bred = 4	Eggs = 8

Code for where products were sold to

Middleman = 1	Slaughter = 4
Other farms/ villages = 2	Unknown = 5
Local markets = 3	

5. People movements

Discuss details of all people who came in the farm from two weeks before onset of disease (*specify the date, name, address and phone number of the visitor).*

Regular visitors into the farm:

Irregular visitors into the farm:

Visits of the farmer or his staff to other to places holding birds (give place and contact of that place):

Signature of the reporting officer	Signature of the paravet or vet	Signature of the farmer
Date	Date	Date